Ocean Ecology Data Report: Coastal Waters off Southwest Vancouver Island Spring and Summer 1981

S. Hill, K. Denman, D. Mackas, H. Sefton and R. Forbes

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Department of Fisheries and Oceans
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1983

Canadian Data Report of Hydrography and Ocean Sciences No. 8

Canadian Data Report Of Hydrography and Ocean Sciences

These reports provide a medium for the documentation and dissemination of data in a form directly useable by the scientific and engineering communities.

Generally, the reports will contain raw and/or analyzed data but will not contain interpretations of the data. Such compilations will commonly have been prepared in support of work related to the programs and interests of the Ocean Science and Surveys (OSS) sector of the Department of Fisheries and Oceans.

Data Reports are produced regionally but are numbered and indexed nationally. Requests for individual reports will be fulfilled by the issuing establishment listed on the front cover and title page. Out of stock reports will be supplied for a fee by commercial agents.

Regional and headquarters establishments of Ocean Science and Surveys ceased publication of their various report series as of December 1981. A complete listing of these publications and the last number issued under each title are published in the *Canadian Journal of Fisheries and Aquatic Sciences*, Volume 38: Index to Publications 1981. The current series began with Report Number 1 in January 1982.

Rapport statistique canadien sur l'hydrographie et les sciences océaniques

Ces rapports servent de véhicule pour la compilation et la diffusion des données sous une forme directement utilisable par les scientifiques et les techniciens.

En général, les rapports contiennent des données brutes ou analysées mais ne fournissent pas d'interprétations des données. Ces compilations sont préparées le plus souvent à l'appui de travaux reliés aux programmes et intérêts du service des Sciences et Levés océaniques (SLO) du ministère des Pêches et des Océans.

Les rapports statistiques sont produits à l'échelon régional mais sont numérotés et placés dans l'index à l'échelon national. Les demandes de rapports seront satisfaites par l'établissement auteur dont le nom figure sur la couverture et la page de titre. Les rapports épuisés seront fournis contre rétribution par des agents commerciaux.

Les établissements des Sciences et Levés océaniques dans les régions et à l'administration centrale ont cessé de publier leurs diverses séries de rapports depuis décembre 1981. Vous trouverez dans l'index des publications du volume 38 du *Journal canadien des sciences halieutiques et aquatiques*, la liste de ces publications ainsi que le dernier numéro paru dans chaque catégorie. La nouvelle série a commencé avec la publication du Rapport n° 1 en janvier 1982.

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Hydrography and Ocean Sciences No. 8

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by

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ABSTRACT

Hill, S., K. Denman, D. Mackas, H. Sefton and R. Forbes, 1983. Ocean Ecology Data Report: Coastal Waters off Southwest Vancouver Island. Spring and Summer 1981. Can. Data Rep. Hydrogr. Ocean Sci. 8: 93 p.

The results of a 1981 sampling program in coastal waters off the southwest coast of Vancouver Island are presented, including physical, chemical and biological data from analysis of bottle samples collected with an integrated vertical profiler, and zooplankton counts from vertical net hauls.

KEYWORDS: data, oceanographic, Pacific

RÉSUMÉ

Hill, S., K. Denman, D. Mackas, H. Sefton and R. Forbes, 1983. Ocean Ecology Data Report: Coastal Waters off Southwest Vancouver Island. Spring and Summer 1981. Can. Data Rep. Hydrogr. Ocean Sci. 8: 93 p.

Les results d'une étude des eaux côtières du sud-ouest de l'isle de Vancouver sont présentés. On inclus les données physiques, chimiques et biologiques de l'analyse des échantillons d'eau recueillis durant les profile verticeaux, et les comptes de zooplankton recueillis avec les coups de filet verticeaux.

MOTS-CLÉS: données, oceanographique, Pacifique

Acknowledgements

The authors wish to acknowledge R. Waters (through EVS Consultants Ltd.) for phytoplankton counts; Seakem Oceanography Ltd.,for the nutrient analyses; and Chart Production for providing photographic reductions of our figures and maps. Finally, we wish to thank the officers and crew of all the ships used in this research programme.

Introduction.

During the spring and summer of 1981, 2 research cruises in the area of Juan de Fuca Strait and the coastal waters off the southwest coast of Vancouver Island were undertaken by the Ocean Ecology group at the Institute of Ocean Sciences (IOS). The purpose of these cruises was to re-examine persistent areas of high planktonic biomass and productivity and to attempt to determine the oceanographic processes responsible for these areas of high productivity. On these cruises, physical, chemical and biological data were collected with an integrated oceanographic vertical profiler (OVP) consisting of several electronic sensors, a data acquisition system (DAS), and a remotely triggerable array of Niskin bottles (rosette sampler). In this report we present the results of the analysis of bottle samples, together with selected data from the electronic sensors, and a cruise-by-cruise inventory of the total data set available from the OVP. Data from the analysis of zooplankton samples collected by vertical net hauls is also included.

Sampling and analytical methods.

1. Electronic sensors.

Sensors used on the 1981 cruises include a Guildline Model 8701 digital CTD, a Variosens III *in situ* fluorometer set up to measure chlorophyll fluorescence, a Martek 1 m. path length transmissometer measuring beam attenuance, and a Licor 193SB spherical quantum irradiance sensor measuring photosynthetically active quantum scalar irradiance(PAR). Outputs from these sensors were multiplexed, digitized, and communicated in serial mode to the surface via 7-conductor armoured cable through an oceanographic winch. The DAS was designed and constructed at IOS. At the surface, data from the DAS were sent to a Hewlett-Packard 9845B computer, which stored the data on 8-inch flexible disks and performed some real-time data analysis and graphics display. At the same time that subsurface data was being recorded, the surface PAR was being measured using a Biospherical Instruments QSR 240 Quantum Scalar reference system, and logged by the HP9845. A typical cast of tne OVP consisted of two phases. First, the package was lowered at a speed of 0.5 to 1.0 m/sec, and during this time the electronic sensors were being sampled and logged at a frequency of 8 Hz. Then, after the depths at which the bottles were to be tripped were decided upon, the OVP was raised at a speed of approximately 0.5 m/sec and bottles were tripped "on the fly".

2. Bottle data.

a) temperature: duplicate temperatures from protected reversing thermometers were taken periodically as a check on the

CTD temperatures. An offset correction was later applied to the CTD temperatures.

b) salinity: salinity samples were collected periodically as a check on the CTD conductivity measurement. These samples were analysed later in the laboratory using an Autosal Model 8400 induction salinometer. An offset correction was later applied to the CTD salinities.

c) chlorophyll: the chlorophyll content of phytoplankton samples was determined at sea using the fluorometric technique outlined in Strickland and Parsons (1972). These values were used to adjust (by linear transformation) the Variosens chlorophyll value (derived from a laboratory calibration using live phytoplankton cultures) for varying field conditions.

d) dissolved oxygen: the dissolved oxygen content of bottle samples was determined at sea using the Winkler technique outlined in Strickland and Parsons (1972). Samples were "fixed" with manganous sulphate and alkaline iodide solution within 15 minutes of being drawn, and titrations were carried out within 24 hours of sampling.

e) inorganic nutrients: reactive nitrate-nitrite, phosphate and silicate concentrations were measured in the laboratory using colorimetric methods with a Technicon II auto-analyser. Water samples were quick-frozen immediately after collection and were kept frozen until analysis.

f) primary productivity: three sample bottles (1 dark, 2 light) were drawn from rosette bottles. These were inoculated with 1 ml of 5 μC/ml 14C (as bicarbonate) and incubated for at least 2 hours under fluorescent lights. These samples were then filtered onto 0.45 micron Millipore filters which were fumed over concentrated hydrochloric acid for 1 minute, and then placed in 15 ml Aquasol. The activity of these samples was determined later using a scintillation counter, and the results used to estimate primary productivity.

g) phytoplankton counts: samples were drawn from rosette bottles, preserved in Lugol's solution, and stored for later analysis. Subsamples (ranging from 2.2 ml to 100 ml) were settled out and counted with an inverted microscope.

h) zooplankton counts: zooplankton samples were collected in vertical net hauls, using a net with one-half square meter opening, #6 mesh (233 micron),and a mechanical flowmeter. Samples were preserved in 5% to 10% formalin in seawater for later analysis.

Estimated accuracy and precision of data.

1. CTD and other electronic sensor values - the fundamental limit to resolution is given by the 12 bit accuracy (equivalent to .025% of full scale) of the analog to digital converter used. Manufacturers give the accuracy and resolution of the sensors as follows:

Variable	Accuracy	Resolution
Pressure	: ±1.25 dbar	0.25 dbar
Temperature	: ±0.01 deg. C.	0.003 deg C
Equivalent salinity	: ±0.01 psu	0.005 psu
% transmission	: ±1.00 %	0.5 %
in situ PAR	: ±7.00 %	0.50 %

2. Chlorophyll - Strickland and Parsons (1972) estimate that the fluorometric technique should give a value within 8% of the true value for any chlorophyll concentration greater than 0.5 µg/l.

3. Dissolved oxygen - Strickland and Parsons (1972) estimate that the Winkler technique should give a value within 0.034 ml/l of the true value.

4. Inorganic nutrients - replicate analyses were done for some samples from cruises 79-04, 79-05, and 80-05. The expected percentage error was estimated through a statistical treatment of these data (see Appendix 1), and the values found are summarized below:

Cruise	Nitrate error	Phosphate error	Silicate error	N
79-04	10.1	5.6	8.7	61
79-05	15.4	15.2	15.7	120
80-05	18.2	2.4	6.7	56
SUM	15.0	11.3	12.4	237

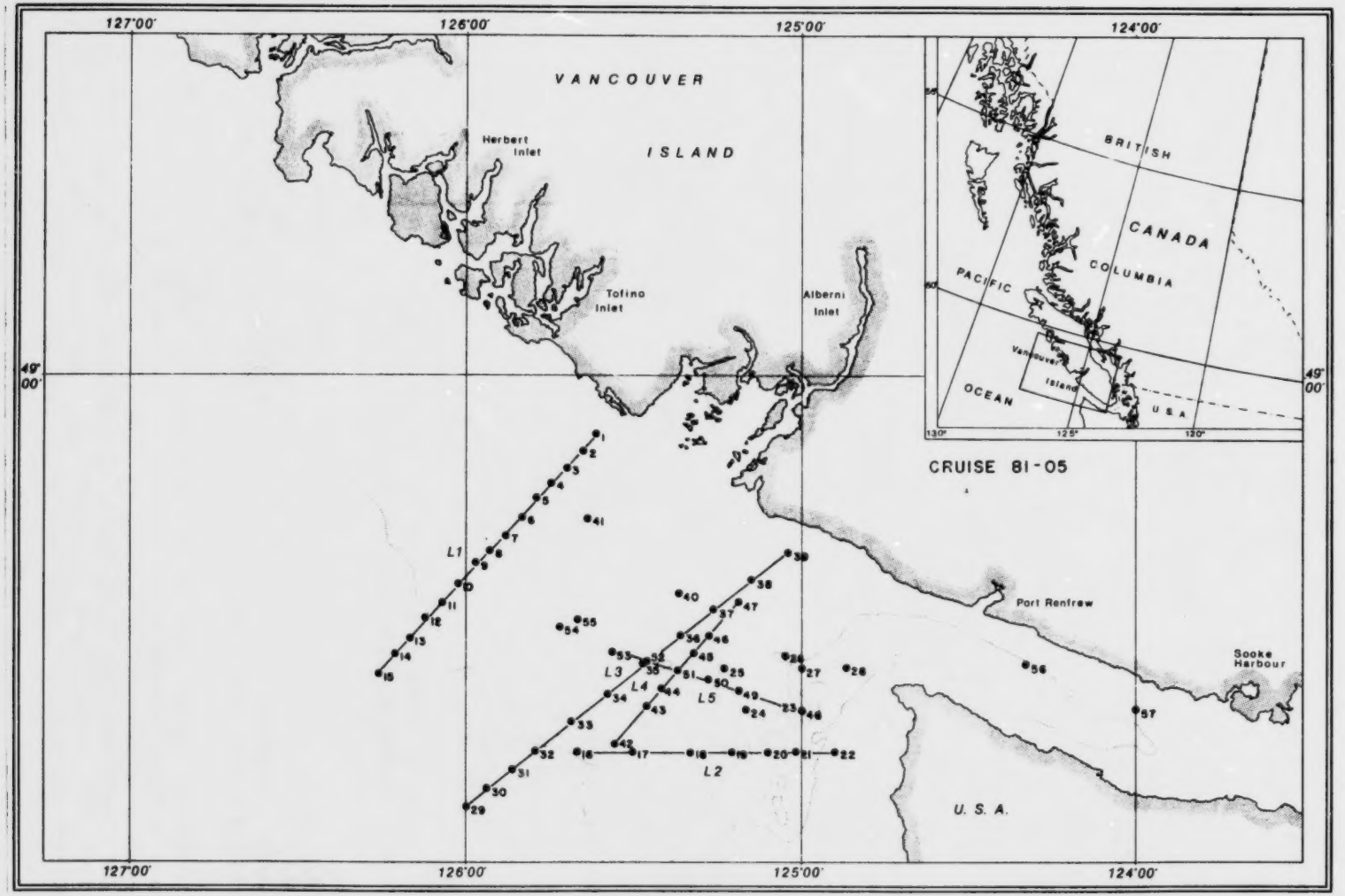
5. Primary productivity - the precision of this method is described in Strickland and Parsons (1972).

References

Strickland, J.D.H. and Parsons, T.R., 1972. A Practical Manual of Seawater Analysis. Fisheries Research Board of Canada, Bulletin 167(2nd edition).

Notes.

1. The zooplankton samples described in this report were all analyzed by the same worker (H. Sefton). Similarly, the phytoplankton samples were all analyzed by R. Waters.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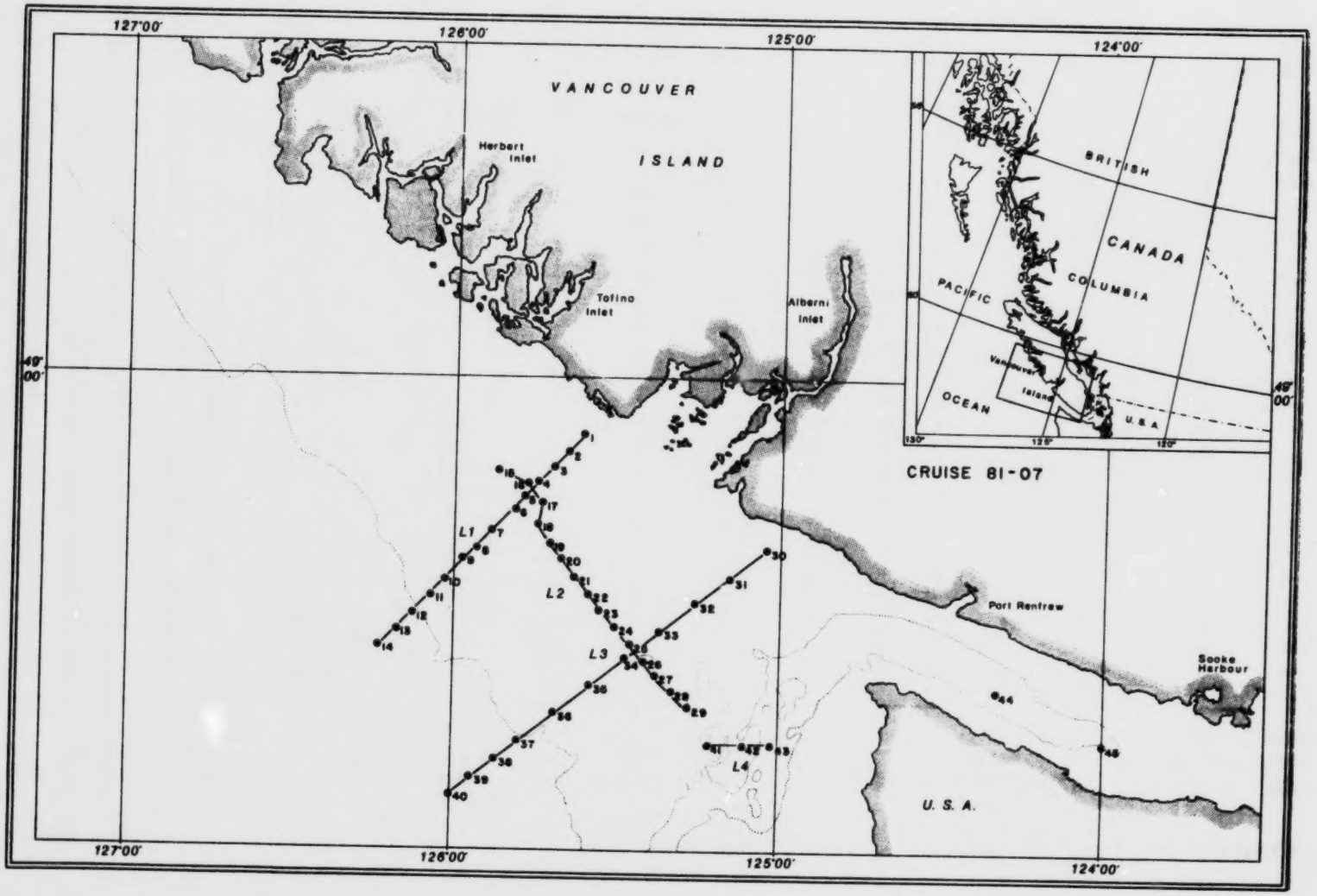
VANCOUVER
ISLAND
Herbert Inlet
Tofino Inlet
Alberni Inlet
Port Renfrew
Sooke Harbour
U. S. A.
L1
L2
L3
L4
L5
CRUISE 81-05
BRITISH
COLUMBIA
CANADA
PACIFIC
OCEAN
Vancouver Island
U S A
130°
125°
120°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VANCOUVER
ISLAND
Herbert Inlet
Tofino Inlet
Alberni Inlet
BRITISH
COLUMBIA
CANADA
PACIFIC
OCEAN
U.S.A.
CRUISE 81-07
L1
L2
L3
L4
Port Renfrew
Sooke Harbour
U. S. A.

CRUISE 8105

DATA TYPES AVAILABLE: "+" = available; "-" = not available

STN NO	DATE DA/MO	TIME (PDT)	LAT	LONG	CTD	VARIO. CHL a	BEAM ATTEN-UANCE	*IN SITU* LIGHT	pH	O_2	NUTRI-ENTS	CHL a	^{14}C	PHYTO PLANK-TON	ZOO-PLANK-TON
1	29 04	10 00	48°53.1'	125°36.7'	+	+	+	+	+	+	+	+	+	-	-
2	29 04	11 06	48°51.1'	125°39.3'	+	+	+	-	-	-	-	-	-	-	-
3	29 04	11 40	48°49.2'	125°42.0'	+	+	+	+	+	+	+	+	+	+	-
4	29 04	12 25	48°47.3'	125°44.8'	+	+	+	+	-	-	-	-	-	-	-
5	29 04	13 20	48°45.4'	125°47.4'	+	+	+	+	+	+	+	+	+	+	+
6	29 04	14 11	48°43.2'	125°50.2'	+	+	+	+	-	-	-	-	-	-	-
7	29 04	14 50	48°41.2'	125°53.0'	+	+	+	+	+	+	+	+	+	+	-
8	29 04	16 03	48°39.3'	125°55.8'	+	+	+	+	-	-	-	-	-	-	-
9	29 04	16 52	48°37.9'	125°58.5'	+	+	+	+	+	+	+	+	+	-	+
10	29 04	17 56	48°35.2'	125°01.4'	+	+	+	+	-	-	-	-	-	-	-
11	29 04	18 34	48°33.1'	126°04.2'	+	+	+	+	+	+	+	+	+	-	-
12	29 04	19 26	48°31.0'	126°07.1'	+	+	+	+	-	-	-	-	-	-	-
13	29 04	20 21	48°28.8'	126°10.0'	+	+	+	+	-	+	+	+	-	+	+
14	29 04	21 05	48°26.9'	126°12.8'	+	+	+	+	-	-	-	-	-	-	-
15	29 04	21 38	48°24.6'	126°15.8'	+	+	+	+	-	+	+	-	-	-	+
16	30 04	12 27	48°47.0'	125°29.0	+	+	-	+	-	+	+	+	-	+	-
17	01 05	09 41	48°15.0'	125°30.0'	+	+	-	+	+	+	+	+	+	+	-
18	01 05	10 41	48°15.0'	125°20.0'	+	+	-	+	+	+	+	+	+	+	-
19	01 05	11 24	48°15.0'	125°12.5'	+	+	-	+	+	+	+	+	+	+	-
20	01 05	12 24	48°15.0'	125°06.0'	+	+	-	+	+	+	+	+	+	+	-
21	01 05	13 27	48°15.0'	125°01.0'	+	+	-	+	+	+	+	+	+	+	-
22	01 05	14 34	48°15.0'	124°54.0'	+	+	-	+	+	+	+	+	+	+	-
23	01 05	15 32	48°20.0'	125°00.0'	+	+	-	+	+	+	+	+	+	+	-
24	01 05	17 00	48°20.0'	125°10.0'	+	+	-	+	+	+	+	+	+	+	-
25	01 05	18 55	48°25.0'	125°14.0'	+	+	-	+	+	+	+	+	+	+	-
26	01 05	20 11	48°26.5'	125°03.0'	+	+	-	+	+	+	+	+	+	+	-
27	01 05	20 56	48°25.0'	125°00.0'	+	+	-	+	+	+	+	+	+	+	-
28	01 05	21 51	48°25.0'	124°52.0'	+	+	-	+	+	+	+	+	+	+	-
29	03 05	06 32	48°08.5'	126°00.0'	+	+	-	+	+	+	+	+	+	+	-

CRUISE 8105

DATA TYPES AVAILABLE: "+" = available; "-" = not available

STN NO.	DATE DA/MO	TIME (PDT)	LAT	LONG	CTD	VARIO. CHL a	BEAM ATTEN-UANCE	*IN SITU* LIGHT	pH	O_2	NUTRI-ENTS	CHL a	^{14}C	PHYTO-PLANK-TON	ZOO-PLANK-TON
30	03 05	08 01	48°10.6'	125°56.2'	+	+	-	+	-	-	-	+	-	-	+
31	03 05	08 46	48°12.9'	125°52.0'	+	+	-	+	+	+	+	+	+	+	-
32	03 05	09 40	48°15.1'	125°47.7'	+	+	-	+	+	+	+	+	+	+	-
33	03 05	10 49	48°18.6'	125°41.2'	+	+	-	+	+	+	+	+	+	+	+
34	03 05	11 43	48°22.0'	125°34.7'	+	+	-	+	+	+	+	+	+	+	-
35	03 05	15 51	48°25.5'	125°28.3'	+	+	-	+	+	+	+	+	+	+	-
36	03 05	17 03	48°28.9'	125°21.8'	+	+	-	+	+	+	+	+	+	+	+
37	03 05	18 08	48°32.2'	125°15.5'	+	+	-	+	+	+	+	+	+	+	-
38	03 05	19 10	48°35.6'	125°09.0'	+	+	-	+	+	+	+	+	+	+	-
39	03 05	20 10	48°39.0'	125°02.5'	+	+	-	+	+	+	+	+	+	+	+
40	04 05	12 28	48°34.0'	125°22.0'	+	+	-	+	-	-	+	+	-	+	+
41	04 05	06 31	48°43.0'	125°38.5'	+	+	-	+	-	-	+	+	-	+	+
42	06 05	05 41	48°16.0'	125°33.6'	+	+	-	+	-	-	+	+	-	+	+
43	06 05	06 36	48°20.5'	125°27.6'	+	+	-	+	-	-	+	+	-	+	+
44	06 05	07 32	48°22.5'	125°25.0'	+	+	-	+	-	-	+	+	-	+	+
45	06 05	10 06	48°26.8'	125°19.3'	+	+	-	+	-	-	+	+	-	+	+
46	06 05	11 12	48°28.9'	125°16.6'	+	+	-	+	-	-	+	+	-	+	+
47	06 05	12 21	48°33.0'	125°11.2'	+	+	-	+	-	-	+	+	-	+	+
48	06 05	14 38	48°20.0'	125°00.0'	+	+	-	+	+	-	+	+	+	+	+
49	06 05	16 33	48°22.4'	125°11.2'	+	+	-	+	+	-	+	+	+	+	+
50	06 05	17 30	48°23.6'	125°16.8'	+	+	-	+	+	-	+	+	+	+	+
51	06 05	08 35	48°24.8'	125°22.2'	+	+	-	+	-	-	+	+	-	+	+
52	06 05	19 05	48°25.8'	125°27.6'	+	+	-	+	+	-	+	+	+	+	+
53	06 05	19 45	48°27.1'	125°33.8'	+	+	-	+	-	-	+	+	-	+	+
54	06 05	21 14	48°30.0'	125°43.3'	+	+	-	+	-	-	+	+	-	+	+
55	07 05	21 44	48°30.8'	124°40.0'	+	+	-	-	-	-	+	+	-	-	+
56	07 05	23 32	48°25.4'	124°20.0	+	+	-	-	+	+	+	+	+	+	+
57	08 05	01 32	48°20.0'	124°00.0'	+	+	-	-	-	+	+	+	-	+	+

CRUISE 8107

DATA TYPES AVAILABLE: "+" = available: "-" not available

STN NO.	DATE DA/MO	TIME (PDT)	LAT	LONG	CTD	VARIO. CHL. a	BEAM ATTEN-UANCE	*IN SITU* LIGHT	pH	O_2	NUTRI-ENTS	CHL a	^{14}C	PHYTO-PLANK-TON	ZOO-PLANK-TON
1	14 09	20 13	48°53.1'	125°36.7'	+	+	+	+	+	+	+	+	+	-	-
2	14 09	20 59	48°51.1'	125°39.3'	+	+	+	+	-	-	-	-	-	-	+
3	14 09	21 32	48°49.2'	125°42.0'	+	+	+	+	+	+	+	+	+	-	-
4	14 09	22 23	48°47.3'	125°44.8	+	+	+	+	-	-	-	-	-	-	+
5	14 09	22 54	48°45.4'	125°47.4'	+	+	+	+	-	-	-	-	-	-	-
6	14 09	23 35	48°43.8'	125°48.8'	+	+	+	+	+	+	+	+	+	+	+
7	15 09	00 24	48°41.2'	125°53.0'	+	+	+	+	-	-	-	-	-	-	-
8	15 09	01 08	48°39.3'	125°55.8'	+	+	+	+	+	+	+	+	+	+	+
9	15 09	01 48	48°37.9'	125°58.5'	+	+	+	+	-	-	-	-	-	-	-
10	15 09	02 39	48°35.2'	126°01.4'	+	+	+	+	+	+	+	-	+	+	+
11	15 09	03 21	48°33.1'	126°04.2'	+	+	+	+	-	-	-	-	-	-	-
12	15 09	04 13	48°31.0'	126°07.1'	+	+	+	+	+	+	+	+	+	+	+
13	15 09	05 06	48°28.8'	126°10.0'	+	+	+	+	-	-	-	-	-	-	-
14	15 09	06 11	48°26.9'	126°12.8'	+	+	+	+	+	+	+	+	+	+	+
15	15 09	18 29	48°48.8'	125°51.8'	+	+	+	+	+	+	+	+	+	+	+
16	15 09	19 12	48°47.2'	125°46.6'	+	+	+	+	+	+	+	+	+	-	-
17	15 09	19 47	48°44.8'	125°44.2'	+	+	+	+	-	-	-	-	-	-	-
18	15 09	20 36	48°42.2'	125°44.8'	+	+	+	+	+	+	+	+	+	+	+
19	15 09	21 22	48°39.9'	125°42.4'	+	+	+	+	-	-	-	-	-	-	-
20	15 09	22 11	48°37.8'	125°40.1'	+	+	+	+	+	+	+	+	+	+	+
21	15 09	22 58	48°35.6'	125°37.8'	+	+	+	+	-	-	-	-	-	-	-
22	15 09	23 44	48°33.5'	125°35.0'	+	+	+	+	-	-	-	-	-	-	-
23	16 09	00 47	48°31.4'	125°33.5'	+	+	+	+	+	+	+	+	+	+	+
24	16 09	01 32	48°29.4'	125°30.1'	+	+	+	+	-	-	-	-	-	-	-
25	16 09	02 07	48°27.5'	125°27.2'	+	+	+	+	-	-	-	-	-	-	-
26	16 09	02 56	48°25.2'	125°24.5'	+	+	+	+	+	+	+	+	+	+	+
27	16 09	03 43	48°23.4'	125°22.5'	+	+	+	+	-	-	-	-	-	-	-
28	16 09	04 22	48°21.4'	125°19.5'	+	+	+	+	-	-	-	-	-	-	-
29	16 09	05 28	48°19.4'	125°16.8'	+	+	+	+	+	+	-	+	+	+	+

CRUISE 8107

DATA TYPES AVAILABLE: "+" = available: "-" not available

STN NO.	DATE DA/MO	TIME (PDT)	LAT	LONG	CTD	VARIO. CHL a	BEAM ATTEN-UANCE	*IN SITU* LIGHT	pH	O_2	NUTRI-ENTS	CHL a	^{14}C	PHYTO-PLANK-TON	ZOO-PLANK-TON
30	16 09	18 16	48°39.0'	125°02.5'	+	+	+	+	-	-	-	-	-	-	-
31	16 09	19 20	48°35.6'	125°09.0'	+	+	+	+	+	+	+	+	+	+	+
32	16 09	20 09	48°32.2'	125°15.5	+	+	+	+	-	-	-	-	-	-	-
33	16 09	21 49	48°28.9'	125°21.0'	+	+	+	+	+	+	+	+	+	+	+
34	16 09	22 52	48°25.5'	125°28.3'	+	+	+	+	+	+	+	+	+	+	+
35	17 09	00 01	48°22.0'	125°34.7'	+	+	+	+	+	+	+	+	+	+	+
36	17 09	01 13	48°18.6'	125°41.2'	+	+	+	+	+	+	+	+	+	+	+
37	17 09	02 04	48°15.1'	125°47.7'	+	+	+	+	-	-	-	-	-	-	-
38	17 09	03 01	48°12.9'	125°52.0'	+	+	+	+	+	+	-	+	+	+	+
39	17 09	03 50	48°10.6'	125°56.2'	+	+	+	+	-	-	-	-	-	-	-
40	17 09	04 49	48°08.5'	126°00.0'	+	+	+	+	+	+	+	+	+	+	+
41	17 09	18 32	48°15.0'	125°12.5'	+	+	+	+	+	+	+	+	+	+	+
42	17 09	19 25	48°15.0'	125°06.0'	+	+	+	+	-	-	-	-	-	-	-
43	17 09	20 56	48°15.0'	125°01.0'	+	+	+	+	-	+	+	-	-	+	+
44	18 09	00 52	48°22.0	124°20.0'	+	+	+	+	-	-	-	-	-	-	-
45	18 09	03 15	48°15.4'	124°00.0'	+	+	+	+	-	+	+	+	-	-	+

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 1
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
1	01	52.1	9.33	31.92		4.87		16.80	2.04	27.00
1	03	30.8	9.30	31.23		5.99		9.10	1.48	14.10
1	04	21.1	9.90	30.43		6.75		3.20	.75	5.10
1	05	9.9	9.99	30.16	1.88	6.49	6.7	2.50	.70	4.50
1	06	4.6	10.09	29.96	3.03	7.17	13.9	2.50	.65	4.20
2	01	5.0			1.94					
3	01	45.4	9.22	31.79		5.01		17.30	1.68	29.20
3	02	25.2	9.19	31.48		5.64		14.40	1.61	22.10
3	03	15.4	9.51	30.87	.46	6.41	1.1	6.70	1.02	10.00
3	04	4.0	9.90	30.15	1.69	6.68	5.9	5.00	.78	6.70
5	01	59.0	9.21	32.30						
5	02	27.6	9.09	31.28	.34	5.92	1.5	13.90	1.49	20.30
5	03	16.9	9.65	30.79		6.62		6.20	.83	8.50
5	04	8.3	9.89	30.75	2.56	6.27	7.6	5.00	.75	7.10
6	01	8.5	10.00	30.69	.53					
7	01	59.9	8.77	32.43		4.11		22.70	2.08	35.60
7	02	29.2	9.03	31.43				15.10	1.48	22.70
7	03	18.2	9.65	30.94		6.31		7.00	.90	10.20
7	04	8.9	9.91	30.68	.36	6.74	8.9	3.80	.66	5.10
7	05	3.5	10.36	30.57	.63	7.53	33.5	.40	.43	2.90
8	01	15.1	9.88	31.02	6.33					
9	01	96.0				2.95		26.50	2.33	41.80
9	02	75.0				4.11		19.60	1.82	30.00
9	03	50.0				4.74		20.90	1.81	32.00
9	04	30.0				5.54		14.80	1.46	22.00
9	05	20.0			.58	5.99	1.8	10.70	1.17	15.60
9	06	10.0				6.71		4.80	.79	6.90
11	01	138.0	6.86	33.89		2.26		32.00	2.65	54.40
11	02	123.6	6.87	33.89		2.24		30.20	2.61	50.60
11	03	98.7	7.73	33.63		3.13		27.10	2.26	39.50
11	04	72.4	9.09	32.85		4.34		16.70	1.63	27.10
11	05	48.3	9.53	32.35		5.78		8.70	1.10	15.10
11	06	26.0	9.59	32.02		5.96		6.50	.99	12.40
11	07	16.2	9.95	31.58	.50	6.51	2.2	2.80	.69	7.10
11	08	7.0	10.28	31.41	1.03	6.75	5.4	1.20	.55	4.70
12	01	96.0	8.55	33.29						
13	01	245.3	6.15	34.03		2.31		35.70	2.71	62.30
13	02	199.3	6.53	34.01		2.66		33.10	2.56	53.70
13	03	171.5	6.66	33.95		2.40		32.60	2.58	54.80
13	04	143.4	7.15	33.90		2.85		28.70	2.35	42.60
13	05	124.1	7.69	33.68		3.58		28.60	2.24	39.70
13	06	97.9	8.53	33.27	.33	4.52		21.60	1.75	27.50
13	07	74.1	9.28	32.72	.26	5.47		14.70	1.40	23.30
13	08	45.0	9.57	32.40		5.81		10.10	1.15	14.80
13	09	29.5	9.62	32.18		6.32		6.70	.99	13.10
13	10	10.6	10.13	31.67		6.86		1.30	.55	9.70
15	01	251.0	6.23	34.03		2.37		36.70	2.48	61.10
15	02	197.7	6.86	33.98		2.72		33.10	2.28	50.90

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 2
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
15	03	150.8	7.42	33.79		3.24		30.10	2.08	41.80
15	04	125.8	7.90	33.59		3.66		25.90	1.92	33.20
15	05	99.7	8.35	33.11		4.95		19.90	1.53	25.40
15	06	74.1	9.01	32.51		6.51		8.60	1.01	14.20
15	07	48.5	9.45	32.37		7.03		3.90	.72	10.60
15	08	31.3	9.63	32.30		7.12		2.60	.65	9.50
15	09	20.2	9.86	31.76		7.17		2.20	.59	11.50
15	10	8.4	10.18	31.77		7.29		1.20	.52	9.30
16	01	254.2	6.34	34.01		2.07		34.40	2.46	57.40
16	02	197.8	6.64	33.96		2.66		32.60	2.36	53.00
16	03	144.0	6.94	33.90		2.62		28.40	2.40	45.30
16	04	122.1	7.32	33.82		2.97		28.60	2.22	40.90
16	05	97.2	7.63	33.57		3.04		25.90	1.96	34.20
16	06	70.8	8.74	33.14		4.32		20.20	1.56	26.90
16	07	46.5	9.35	32.43		6.22		8.60	1.03	14.10
16	08	24.2	9.54	31.55		6.24		7.50	.99	12.60
16	09	16.5	10.02	31.36	.93	6.80	2.7	2.60	.63	5.70
16	10	9.1	10.09	31.33	.78	6.81	4.1	2.80	.58	6.20
17	01	130.1	7.15	33.84		2.83		29.70	3.33	46.60
17	02	100.4	7.74	33.65		3.23		28.20	2.76	37.50
17	03	72.7	8.54	33.28		4.24		22.70	2.66	29.10
17	04	48.5	9.21	32.56		5.65		12.20	1.59	17.20
17	05	29.3	9.51	32.31	1.03	6.20	.3	7.00	1.48	12.00
17	06	18.7	9.96	31.67		6.71		1.70	.71	6.80
17	07	9.1	10.19	30.92	.66	6.63	4.0	6.40	.84	9.70
18	01	76.6	8.40	33.26		3.89		22.20	2.57	31.30
18	02	47.9	9.13	32.37		6.34		9.70	1.40	16.20
18	03	29.0	9.48	32.23		5.84		8.90	1.47	14.60
18	04	15.6	10.38	31.26	1.06	6.76	3.8	1.70	.58	5.60
18	05	7.0	10.49	31.28	.94	6.74	6.2	2.40	.70	6.70
19	01	209.9	6.42	33.97		2.22		34.90	3.34	58.90
19	02	149.5	6.99	33.84		2.56		33.70	3.15	52.30
19	03	124.7	7.36	33.72		2.79		30.10	2.25	45.80
19	04	97.0	7.79	33.53		2.98		29.40	2.85	43.30
19	05	73.2	9.14	32.69		5.46		13.30	1.42	18.40
19	06	48.8	9.58	32.26		6.35		5.00	.86	10.30
19	07	29.8	10.35	31.80		6.30		0.00	.63	7.40
19	08	21.2	10.43	31.71	.82	6.87	6.0	0.00	.48	5.80
19	09	10.7	10.48	31.33	.85	6.13	7.4	.20	.50	5.20
20	01	93.4	7.82	33.50		3.25		27.30	2.64	40.30
20	02	73.2	8.60	33.08		4.28		22.00	2.18	30.20
20	03	48.2	9.35	32.25		5.77		10.20	.98	17.20
20	04	29.8	9.67	32.00		6.42		5.30	0.00	11.20
20	05	17.5	9.74	31.75	1.00	6.73	1.8	6.10	.98	11.60
20	06	11.1	10.22	31.57	.55	6.30	8.1	5.00	.73	11.20
21	01	251.6	6.25	34.01		2.06		34.50	2.74	58.40
21	02	196.7	6.52	33.94		2.29		32.10	2.90	53.20
21	03	147.4	7.05	33.81		2.67		32.00	2.59	51.40

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 3
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
21	04	123.6	7.20	33.76		2.64		31.10	2.52	49.90
21	05	96.9	7.53	33.62		2.78		30.20	2.62	45.80
21	06	71.9	8.18	33.27		3.66		23.60	2.13	34.20
21	07	48.2	8.90	32.47		4.54		18.50	1.76	26.90
21	08	29.6	9.08	31.92		5.25		15.50	1.51	24.40
21	09	18.7	9.58	31.55	.80	6.15	1.1	8.80	1.06	14.90
21	10	8.5	10.40	30.15	1.73	6.42	2.5	7.70	.93	11.50
22	01	68.3	7.79	33.58		3.44		28.40	2.34	38.20
22	02	52.1	8.26	33.28		3.48		24.90	2.18	34.80
22	03	32.6	8.61	32.81		4.14		23.40	1.97	33.90
22	04	21.6	10.30	29.63	.57	6.04	2.5	6.00	.75	13.10
22	05	10.9	10.97	29.13	1.40	6.87	9.1	1.60	.56	8.90
23	01	218.3	6.65	33.94		2.42		32.40	2.38	54.20
23	02	146.8	6.93	33.84		2.36		32.40	2.64	52.00
23	03	125.5	7.09	33.79		2.67		31.50	2.51	49.80
23	04	101.7	7.61	33.62		3.03		33.20	2.09	49.40
23	05	76.1	8.58	33.10		4.06		21.70	1.67	28.60
23	06	50.5	9.43	32.13		6.05		7.10	.96	13.70
23	07	34.2	9.67	31.96	.34	6.18	.9	6.00	.79	11.50
23	08	18.5	9.82	31.59		6.69		6.70	.82	12.20
23	09	10.0	9.75	31.12	.55	6.42	1.9	8.60	.97	13.10
24	01	136.6	7.31	33.72		2.64		31.70	2.30	49.40
24	02	100.4	7.58	33.63		2.87		29.00	2.28	43.20
24	03	77.2	8.06	33.43		3.53		25.50	2.04	35.70
24	04	52.9	9.06	32.83		4.34		15.10	1.36	20.00
24	05	32.1	9.38	32.33		6.35		7.50	.87	13.10
24	06	21.6	9.56	32.21	.45	6.49	.5	4.40	.77	9.80
24	07	14.6	10.02	31.89	.76	6.91	2.9	1.00	.51	8.20
25	01	170.0	6.76	33.92		2.16		28.70	2.51	49.50
25	02	128.5	7.08	33.85		2.27		31.60	2.42	50.10
25	03	101.9	7.44	33.73		2.93		29.50	2.32	44.20
25	04	77.1	8.79	33.13		4.39		19.00	1.61	23.70
25	05	52.5	9.28	32.66		5.47		12.70	1.22	17.30
25	06	32.9	9.43	32.41		6.22		8.00	.94	13.10
25	07	22.3	9.64	32.21	.68	6.41	.5	4.80	.78	10.00
25	08	13.0	10.15	31.78	.92	6.93	2.0	.40	.52	6.20
26	01	149.8	7.05	33.85		2.40		30.40	2.52	48.90
26	02	129.8	7.50	33.72		2.78		29.40	2.33	44.00
26	03	103.9	8.37	33.30		3.76		24.70	1.95	34.00
26	04	75.6	8.52	33.04		3.79		24.30	1.96	34.00
26	05	49.3	8.84	32.12		4.79		19.20	1.66	28.40
26	06	28.8	9.22	31.35		5.98		17.00	1.45	25.80
26	07	22.4	9.81	31.15	10.87	7.01	29.3	8.70	.82	11.60
26	08	11.4	10.14	30.89	10.20		33.6	4.20	.60	6.90
27	01	212.0	6.52	33.97		2.07		33.90	2.62	56.30
27	02	154.5	6.73	33.90		2.13		33.60	2.57	54.70
27	03	123.8	7.07	33.80		2.45		32.20	2.46	50.90
27	04	96.1	7.34	33.65		2.57		31.00	2.40	47.60

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 4
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
27	05	73.4	8.05	33.07		3.36		27.10	2.10	39.80
27	06	49.7	8.64	31.94		4.75		23.80	1.96	37.20
27	07	29.5	9.59	31.34		6.22		11.90	1.15	18.90
27	08	21.0	10.18	31.41	1.05		3.4	5.90	.74	11.80
27	09	10.0	10.28	31.33	1.31		4.1	5.00	.76	10.70
28	01	239.5	6.23	34.01		1.96		34.60	2.54	61.00
28	02	200.6	6.55	33.95		2.14		33.60	3.11	57.20
28	03	150.6	6.83	33.87		2.32		30.50	2.94	47.90
28	04	124.6	7.00	33.82		2.36		30.80	2.92	49.40
28	05	99.7	7.18	33.75		2.47		28.60	2.88	45.60
28	06	75.0	7.68	33.62		3.00		26.10	2.62	38.50
28	07	48.7	7.89	33.10		3.69		26.60	2.29	40.30
28	08	28.7	9.60	30.90	6.68	6.67	18.1	11.40	1.20	17.70
28	09	17.4	10.31	29.89		6.66	5.2	6.20	.80	11.10
28	10	9.6	10.51	29.54	7.03			5.20	.76	11.30
29	01	248.5	6.29	33.98		2.86		32.40	2.65	53.60
29	02	200.7	6.76	33.93		3.68		28.30	2.45	43.70
29	03	148.9	6.95	33.70		4.40		22.90	2.22	32.40
29	04	125.7	7.10	33.47		4.69		23.10	2.05	30.30
29	05	100.1	7.79	33.08		5.12		17.60	1.81	21.90
29	06	77.7	8.92	32.60		5.97		9.50	1.30	14.00
29	07	53.3	9.98	32.36	.22	6.76		3.20	.68	9.90
29	08	25.3	10.49	32.33		6.76		2.80	.88	9.90
29	09	16.0	10.49	32.33		6.64	.3	2.80	.73	11.30
29	10	8.2	10.49	32.32	1.83	6.66	.8	2.80	.80	10.20
30	01	11.5	10.25	31.73	.98					
31	01	240.4	6.23	34.03		2.05		33.20	2.84	56.50
31	02	198.6	6.72	33.97		2.21		32.00	2.66	51.70
31	03	150.7	7.32	33.83		3.28		28.90	2.25	40.40
31	04	124.3	7.53	33.71		3.42		27.70	2.17	37.20
31	05	97.1	8.27	33.35		4.17		21.70	1.88	28.00
31	06	74.4	9.21	32.77		4.68		15.80	1.46	24.60
31	07	48.2	9.48	32.38		5.88		8.30	1.12	15.10
31	08	29.9	9.56	32.12		5.65		8.00	1.16	13.80
31	09	15.8	10.12	31.72	.99	6.70	3.8	2.00	.67	10.40
31	10	3.8	10.28	31.70	1.25	6.88	5.8	.50	.54	9.90
32	01	202.7	6.58	33.99		2.29		33.20	2.54	53.80
32	02	149.6	7.01	33.91		2.58		31.50	2.44	47.30
32	03	123.6	7.59	33.73		3.00		28.50	2.01	38.70
32	04	99.1	8.29	33.41		3.59		25.20	1.92	32.60
32	05	73.5	9.10	32.87		4.69		16.80	1.62	23.60
32	06	49.3	9.48	32.39		5.97		7.90	1.06	13.50
32	07	29.7	9.59	32.19		5.97		7.50	1.01	13.50
32	08	15.5	10.22	31.79	1.05	6.66	4.4	.70	.58	11.00
32	09	9.5	10.13	31.46	.97	6.82	8.9	4.40	.73	8.80
33	01	137.5	6.93	33.91		2.51		30.40	2.49	47.40
33	02	129.0	7.06	33.88		2.51		32.50	2.45	49.20
33	03	98.3	7.67	33.65		2.79		28.10	2.31	42.50

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 5
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SIO4 (uM/l)
33	04	72.9	8.68	33.19		4.05		20.40	1.62	26.70
33	05	49.9	9.31	32.59		4.97		14.90	1.50	23.40
33	06	29.5	9.62	31.85		5.91		7.20	.95	12.10
33	07	15.4	10.33	31.54	1.59	7.08	8.8	1.90	.61	7.20
33	08	15.0	10.33	31.54	1.59		9.6			
33	09	5.3	10.19	31.19	1.78	7.08	10.7	3.50	.68	7.40
33	10	4.7	10.19	31.18	1.79		10.7			
34	01	138.5	6.79	33.92		2.25		32.00	2.59	53.60
34	02	97.7	7.72	33.60		3.00		29.70	2.42	46.20
34	03	72.3	8.08	33.37		3.54		27.70	2.32	42.40
34	04	47.4	8.51	32.43		4.26		23.70	2.05	34.80
34	05	29.8	9.41	31.96		5.88		9.70	1.02	16.80
34	06	13.9	10.15	31.69	1.01	6.64	4.6	1.60	.59	7.00
34	07	5.5	10.25	30.98	10.95	7.31	60.6	.60	.44	3.10
35	01	120.2	7.04	33.85		2.35		26.70	2.48	44.80
35	02	100.2	7.55	33.62		2.58		29.70	2.29	45.70
35	03	74.8	8.10	33.32		3.11		24.40	2.33	36.30
35	04	51.5	8.40	32.75		4.06		24.80	1.94	35.60
35	05	29.9	9.06	31.72		5.86		11.90	1.56	17.70
35	06	10.3	10.20	31.03	1.26	7.55		1.30	.65	2.90
35	07	11.3	10.12	31.11	1.31		85.8			
35	08	3.1	10.55	30.96	.76	8.57		0.00	.37	1.10
35	09	3.6	10.50	30.97	.75		50.3			
36	01	122.2	7.29	33.78		3.14	1.2	26.40	2.36	42.10
36	02	100.9	7.82	33.56		3.38		20.40	2.17	29.30
36	03	78.0	8.61	33.26		4.12		21.70	1.75	27.50
36	04	53.2	8.92	32.74		5.44		13.80	.50	19.00
36	05	30.4	9.32	32.35		6.22		7.00	.53	12.70
36	06	21.8	9.82	32.03		6.69		2.70	.70	8.70
36	07	9.7	10.15	31.73	4.81	7.02	22.5	.60	.98	4.50
36	08	3.0	10.35	30.87	19.00	7.79	100.0	0.00	1.37	1.30
37	01	103.2	7.45	33.60		2.51		30.60	2.48	50.10
37	02	76.4	8.13	33.05		3.68		26.10	2.13	38.20
37	03	50.6	8.49	32.25		4.40		24.00	2.13	37.60
37	04	31.2	8.58	32.01		4.76		23.70	2.10	37.80
37	05	13.8	10.42	30.81	14.50	8.43	72.0	.90	.49	2.90
37	06	5.4	10.66	30.62	12.30	8.43	61.4	.10	.45	2.70
38	01	97.9	7.52	33.51		2.78		28.90	2.47	45.60
38	02	70.7	8.03	33.00		3.50		26.40	2.22	40.00
38	03	50.3	8.71	32.07		4.81		20.90	1.92	32.40
38	04	28.6	9.27	31.24		6.00		14.60	1.43	23.40
38	05	15.1	10.11	30.64	1.47	6.39	7.0	8.40	.89	15.20
38	06	5.7	10.52	29.99	2.51	6.98	13.3	3.70	.59	6.90
39	01	43.9	8.60	32.08		4.62		23.10	2.30	36.10
39	02	32.2	8.81	31.80		5.11		21.20	2.11	33.60
39	03	19.4	9.38	31.12		5.99		14.10	1.40	21.90
39	04	10.8	9.74	30.79	1.69	7.02	4.7	8.30	1.06	11.60
39	05	6.8	10.22	30.21	2.20	6.76	8.3	5.10	.72	8.40

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 6
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SIO4 (uM/l)
40	01	144.4	7.36	33.73		2.34		29.00	2.36	48.60
40	02	127.1	7.43	33.67		2.54		31.40	2.79	51.70
40	03	99.4	7.45	33.61		2.59		29.60	2.36	48.10
40	04	75.0	7.86	33.35		3.07		30.80	2.51	45.50
40	05	50.0	8.47	32.28		4.40		25.30	2.29	39.60
40	06	29.5	9.69	31.41		6.37		10.00	1.07	15.50
40	07	9.0	10.03	31.11	14.40	7.74	74.2	3.60	.64	3.60
40	08	4.5	10.19	30.68	7.25	7.76	43.1	3.50	.65	6.40
41	01	183.1	8.60	32.92		3.51		25.00	2.41	43.60
41	02	149.1	8.68	32.86		3.54		25.10	2.32	42.60
41	03	124.7	8.90	32.70		3.77		23.20	2.17	37.60
41	04	99.1	8.95	32.56		4.34		22.40	2.10	35.60
41	05	75.7	9.03	32.44		4.37		22.00	2.01	33.70
41	06	50.7	8.81	31.94		4.74		20.80	1.93	32.60
41	07	29.9	9.34	31.22		5.82		12.60	1.47	18.50
41	08	20.5	9.63	30.89	10.97	6.50	30.9	7.90	1.16	8.80
41	09	10.4	10.19	30.57		7.58		.40	.46	.90
41	10	7.4	10.37	30.57	1.50	8.05	5.1	0.00	.31	.70
42	01	28.9	9.56	31.75	3.42					
42	02	48.0	9.11	32.38				16.00	1.72	23.40
42	03	3.5	10.72	30.93				.10	.36	4.30
43	01	123.3	7.10	33.85						
43	02	48.5	8.47	32.72				23.40	2.00	34.70
43	03	24.9	9.32	31.65	5.94			0.00	.32	.50
43	04	3.2	10.67	30.87						
44	01	49.6	8.53	32.51				21.20	1.89	31.30
44	02	3.9	10.66	30.89	2.76			.70	.44	5.40
45	01	49.6	9.08	32.70				14.20	1.42	20.20
45	02	10.6	10.00	31.86	.88					
45	03	.7	10.53	31.30				0.00	.46	2.90
46	01	140.9	7.14	33.84						
46	02	50.4	9.16	32.30				12.60	1.38	20.00
46	03	14.4	10.17	31.56	1.23					
46	04	3.4	10.70	31.01				0.00	.40	3.40
47	01	53.0	8.47	32.16				24.60	.47	38.80
47	02	14.5	10.54	30.86	1.64		8.9			
47	03	14.2	10.56	30.78	1.64					
47	04	3.1	10.93	29.20	3.27					
47	05	2.6	10.94	29.19	3.49		22.5			
47	06	2.3	10.93	29.20	3.43					
47	07	2.8	10.92	29.22				1.50	2.14	11.00
48	01	252.2	6.47	33.97						
48	02	47.8	8.72	32.39				14.70	1.83	22.40
48	03	24.4	9.37	31.06	7.83					
48	04	3.8	11.94	26.53				.40	.29	17.40
49	01	48.1	9.16	32.65				13.10	1.34	18.10
49	02	16.3	9.36	31.80	.40		1.7			
49	03	16.1	9.35	31.73	.38					

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 7
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
49	04	4.3	10.61	29.78	3.66					
49	05	4.4	10.67	29.71	3.46		19.9			
49	06	4.4	10.79	29.48				1.70	.48	10.10
50	01	49.6	8.98	32.72				13.30	1.56	18.50
50	02	28.4	9.15	31.92	3.09					
50	03	3.4	11.06	30.79				0.00	.29	.40
51	01	162.2	7.28	33.81						
51	02	48.4	8.65	33.08				21.00	1.84	29.40
51	03	15.2	10.10	31.47	1.44		4.5			
51	04	14.5	10.12	31.38						
51	05	14.6	10.14	31.37	1.43					
51	06	3.0	10.49	31.16	1.98		14.8			
51	07	3.0	10.51	31.14	2.07					
51	08	3.2	10.54	31.11	2.00			1.20	.50	6.50
52	01	142.5	7.08	33.85						
52	02	48.6	8.72	32.28				18.50	1.84	28.10
52	03	9.6	10.46	31.01	3.53					
52	04	4.2	10.95	30.88				0.00	.41	4.50
53	01	48.4	8.69	32.61					1.81	29.20
53	02	10.1	10.12	31.34	3.82			19.60		
53	03	5.3	10.77	30.91				0.00	.38	2.90
54	01	50.2	8.64	32.34				22.20	2.00	35.00
54	02	10.1	10.30	30.67	3.65					
54	03	4.0	10.74	30.26				0.00	.26	1.30
55	01	207.3	6.70	33.92		2.34		37.90	2.33	62.00
55	02	141.2	6.79	33.88		2.04		32.40	2.47	51.30
55	03	123.1	6.99	33.80		2.89		36.60	2.45	56.80
55	04	100.3	7.50	33.54						
55	05	73.0	7.90	33.09		3.49		27.30	2.01	41.90
55	06	47.9	8.36	32.12		4.30		25.30	2.17	41.50
55	07	28.5	8.60	31.76		4.79		21.80	1.87	36.50
55	08	18.4	8.77	31.57		5.14		24.20	2.08	39.70
55	09	10.5	9.06	31.27	1.35	5.69	4.7	20.10	1.57	32.30
55	10	2.9	9.47	30.61	2.47	6.47	8.4	16.70	1.44	27.90
56	01	190.9	6.80	33.89		2.30		35.50	2.50	58.40
56	02	149.1	6.79	33.86		2.31		39.10	2.38	64.80
56	03	125.1	6.82	33.84		2.36		34.80	2.42	57.00
56	04	100.0	7.43	33.40		2.98		33.10	2.09	53.30
56	05	74.3	8.19	32.48		3.95		30.50	1.86	48.30
56	06	48.5	8.51	31.89		4.46		26.10	2.11	42.80
56	07	29.3	8.69	31.61		5.50		26.20	2.18	43.40
56	08	18.2	9.02	31.34	1.32	5.50	6.6	22.80	2.02	37.60
56	09	8.6	9.11	31.27	1.32	5.56	6.8	22.90	2.02	37.60
57	01	136.0	6.93	33.81		2.39		31.00	2.51	50.80
57	02	99.0	7.69	33.06		3.24		28.50	2.05	45.90
57	03	75.4	8.27	32.30		4.23		31.80	2.14	51.00
57	04	55.6	8.68	31.81		4.77		23.40	2.14	39.00
57	05	29.4	8.82	31.58		5.05		27.70	1.81	45.70

DATA BASE LISTING: CRUISE 81-05, STATION 1 TO STATION 57. PAGE 8
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRO mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
57	06	16.9	9.15	31.36		5.96		19.80	1.99	33.40
57	07	8.3	9.16	31.36	2.89	6.03		19.30	1.64	32.50

DATA BASE LISTING: CRUISE 81-07, STATION 1 TO STATION 45. PAGE 1
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
1	01	35.2	9.39	32.29		3.29		26.40	3.11	50.40
1	02	18.3	10.76	31.71	.74	4.90	1.3	11.40	2.45	21.70
1	03	8.7	13.05	31.50		8.93		0.00	.93	3.60
1	04	3.9	14.24	31.38	5.17	9.91	27.8	0.00	.85	3.10
3	01	36.7	9.67	32.09		3.85		26.20	2.69	45.90
3	02	28.7	10.55	31.84		4.66		23.70	2.54	43.70
3	03	20.3	10.68	31.78		4.97		23.60	2.44	43.90
3	04	12.0	11.25	31.67	.78	5.55	3.4	21.50	2.30	42.80
3	05	4.9	13.64	31.44	14.01	8.97	41.9	.30	.78	4.70
6	01	100.8	7.88	33.16		2.39		30.70	3.28	53.70
6	02	74.6	8.30	32.90		2.80		29.80	2.88	50.80
6	03	48.0	9.33	32.29		3.64		26.50	2.69	45.70
6	04	29.9	9.92	32.01		4.04		24.60	2.46	43.70
6	05	18.5	11.03	31.88		5.51		21.00	2.07	41.00
6	06	7.7	12.23	31.81	7.08	7.15	38.7	14.10	1.60	31.80
6	07	4.2	12.56	31.74	10.04	7.31	41.3	12.70	1.53	29.30
8	01	83.2	7.43	33.48		2.53		31.00	2.54	52.00
8	02	48.3	9.04	32.50		3.47		26.70	2.26	44.10
8	03	29.5	9.99	32.15		4.28		23.60	2.03	40.60
8	04	17.4	10.73	31.91		5.10		21.90	1.89	39.90
8	05	8.3	11.27	31.80	1.20	5.61	5.6	20.90	1.81	39.50
8	06	5.4	11.86	31.80	2.03	6.18	9.7	17.50	1.67	35.30
10	01	106.3	6.84	33.81		2.26		32.70	2.63	55.60
10	02	74.8	7.65	33.15		3.21		28.10	2.33	42.10
10	03	51.3	8.59	32.76		3.34		26.60	2.26	41.50
10	04	29.8	10.00	32.18		4.31		23.80	2.04	40.30
10	05	18.4	11.72	31.83		5.97	3.7	18.10	1.64	36.20
10	06	7.3	12.01	31.70		5.95		19.00	1.70	37.50
12	01	178.6	6.52	33.98		2.03		34.80	2.71	56.70
12	02	152.0	6.66	33.96		2.07		34.60	2.66	54.30
12	03	101.6	7.05	33.70		3.91		27.00	2.08	35.80
12	04	76.1	7.69	33.27		3.07		28.80	2.35	42.80
12	05	50.5	8.66	32.75		3.49		27.00	2.26	41.40
12	06	29.6	10.08	32.19		4.59		23.50	2.01	39.60
12	07	20.7	10.60	32.03		4.87		22.30	1.91	38.30
12	08	10.8	11.73	31.82	.97	5.87	5.4	20.00	1.77	38.50
14	01	249.8	6.21	34.06		1.79		35.60	3.81	60.00
14	02	199.1	6.48	34.01		2.56		32.50	3.43	51.80
14	03	149.8	6.87	33.95		2.61		31.10	3.43	47.20
14	04	125.1	7.12	33.88		2.66		30.30	3.37	45.00
14	05	100.9	7.22	33.53		4.15		25.20	2.92	32.90
14	06	74.8	7.61	33.25		4.50		19.30	2.68	24.10
14	07	50.5	8.85	32.50		5.95		12.30	1.95	17.40
14	08	29.9	9.37	32.43		6.04		10.00	1.83	14.80
14	09	17.9	10.28	32.36	1.26	6.08	1.8	8.40	1.80	12.60
14	10	8.8	13.89	31.63		6.44		2.10	1.22	3.30
15	01	45.3	8.85	32.52		3.09		27.30	3.01	45.70
15	02	31.3	9.51	32.10		3.49		24.90	2.75	43.30

DATA BASE LISTING: CRUISE 81-07, STATION 1 TO STATION 45. PAGE 2
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
15	03	20.1	10.75	31.77		4.89		19.40	2.30	35.10
15	04	9.7	11.19	31.57	12.78	6.37	79.2	13.40	1.71	27.20
15	05	4.1	12.23	31.74	8.59	7.15	78.7	11.80	1.54	29.40
18	01	132.1	7.67	33.26		2.09		31.70	3.43	53.70
18	02	101.2	7.90	33.12		2.34		30.50	3.32	50.60
18	03	74.6	8.32	32.88		2.81		28.90	3.11	47.30
18	04	51.3	9.17	32.23		3.45		27.40	2.84	45.70
18	05	30.0	9.81	31.92		3.84		25.60	0.00	44.20
18	06	20.7	10.24	31.80		4.34		22.90	0.00	40.00
18	07	10.2	11.21	31.74	10.32	6.05	47.6	15.10	0.00	29.40
18	08	5.3	12.69	31.47	15.67	8.50	85.8	3.50	0.00	12.40
20	01	45.1	8.64	32.67		3.09		27.70	2.78	45.10
20	02	28.2	9.44	32.12		3.56		26.30	2.46	44.00
20	03	19.4	10.07	31.87		4.02		24.40	2.34	42.00
20	04	11.4	10.40	31.47		4.38		24.50	2.20	43.60
20	05	4.7	11.19	31.10	1.43	5.10	5.1	22.10	2.02	42.90
23	01	118.0	6.79	33.77		1.67		34.20	3.37	59.60
23	02	99.7	6.81	33.75		1.73		34.40	3.32	59.10
23	03	75.0	7.06	33.61		1.98		33.40	3.16	54.30
23	04	48.8	8.02	33.10		2.96		26.90	2.68	40.80
23	05	30.6	8.85	32.79		3.56		26.00	2.49	40.80
23	06	20.5	9.65	32.35		4.20		24.30	2.19	40.80
23	07	11.5	10.45	32.06	1.01	4.86	5.1	23.00	2.08	40.50
26	01	146.8	6.53	33.87		1.27		35.80	3.49	67.40
26	02	123.6	6.56	33.86		1.37		35.90	3.46	64.50
26	03	98.1	6.62	33.79		1.47		35.70	3.33	59.80
26	04	74.3	6.85	33.69		1.82		35.10	3.17	55.00
26	05	47.0	7.25	33.47		2.29		32.90	2.97	49.70
26	06	29.8	8.91	32.66		3.56		26.20	2.42	41.20
26	07	18.2	9.97	32.39		4.28		21.40	2.10	35.30
26	08	7.0	13.05	31.65	.95	6.59	8.0	8.90	1.08	22.00
29	01	145.2	6.81	33.88		2.04				
29	02	120.4	6.94	33.83		2.49				
29	03	100.5	7.05	33.75		2.72				
29	04	74.6	7.44	33.45		3.42				
29	05	48.6	8.15	32.99		3.04				
29	06	29.9	9.26	32.59		3.94			2.01	
29	07	18.8	10.82	32.21	.61	4.92	3.5			
31	01	96.3	6.92	33.77		2.01				
31	02	49.4	7.59	33.43		2.51				
31	03	30.2	8.70	32.92		3.42				
31	04	21.1	9.01	32.50		3.02				
31	05	11.0	9.30	32.09	.23	3.55	.8	27.20		46.40
33	01	136.4	6.63	33.92		1.54		35.20	3.44	65.20
33	02	122.3	6.73	33.90		1.66		34.90	3.32	60.80
33	03	101.1	6.74	33.87		1.64		34.90	3.48	61.60
33	04	77.4	6.89	33.75		1.68		34.40	3.33	56.10
33	05	50.0	7.69	33.30		2.76		30.70	3.02	47.50

DATA BASE LISTING: CRUISE 81-07, STATION 1 TO STATION 45. PAGE 3
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
33	06	31.9	8.49	32.84		3.18		28.70	2.84	45.50
33	07	21.5	9.04	32.67		3.58		26.90	2.75	43.60
33	08	8.3	10.36	32.54	.95	5.90	7.4	14.10	1.76	29.30
34	01	132.4	6.60	33.91		1.46		35.70	3.42	67.20
34	02	98.5	6.65	33.87		1.53		35.90	3.43	63.00
34	03	75.7	6.94	33.72		1.94		34.30	3.29	54.70
34	04	49.7	7.53	33.39		2.51		31.80	3.03	48.50
34	05	31.1	9.23	32.60		3.69		25.50	2.54	40.80
34	06	21.9	10.10	32.54		4.29		21.20	2.24	35.30
34	07	9.0	12.30	31.89	1.43	6.17	6.3	14.30	1.61	30.30
35	01	135.6	6.74	33.96		2.21		33.30	3.13	54.30
35	02	97.3	7.06	33.83				30.40	2.69	45.10
35	03	75.5	7.22	33.67		3.28		29.10	2.77	41.40
35	04	49.4	7.91	33.18		2.82		30.10	2.87	47.50
35	05	28.9	8.31	32.84		3.30		27.50	2.65	42.50
35	06	19.0	9.04	32.63		3.63		25.50	2.53	41.00
35	07	3.9	12.79	31.81	13.28	6.86	50.0	10.10	1.45	22.90
36	01	137.7	6.87	33.93		2.55		32.30	2.94	50.90
36	02	122.7	7.08	33.91		2.95		30.40	2.78	45.70
36	03	99.3	7.03	33.76		3.87		27.10	2.60	38.30
36	04	76.1	7.22	33.58		4.17		25.50	2.27	34.10
36	05	49.0	7.88	33.16		2.87		29.80	2.90	47.00
36	06	28.4	9.15	32.59		3.66		29.80	2.88	47.20
36	07	18.9	10.00	31.92		4.09		25.60	2.39	43.90
36	08	11.0	11.24	31.24	.62	4.96	3.1	22.60	2.13	44.10
38	01	236.9	6.67	34.02		2.15				
38	02	197.4	6.78	33.98						
38	03	151.7	7.08	33.91		2.79				
38	04	126.5	7.24	33.82		2.35				
38	05	99.1	7.60	33.39						
38	06	74.7	8.01	32.92		5.03				
38	07	50.4	8.70	32.54		5.99				
38	08	31.0	10.20	32.43	.79		1.1			
38	09	20.9	12.57	32.26		6.54				
38	10	12.3	15.64	32.06		6.07				
40	01	243.4	6.62	34.04		1.60		29.00	3.15	49.70
40	02	199.9	6.85	33.99		1.60		34.60	3.24	60.90
40	03	152.0	6.99	33.93		2.58		32.30	2.97	52.70
40	04	127.8	7.18	33.85		2.61		30.80	2.87	47.80
40	05	103.3	7.50	33.53		3.34		27.70	2.59	39.40
40	06	75.9	8.34	32.67		5.58		13.50	1.63	18.20
40	07	52.2	9.28	32.40		4.52		8.90	1.35	13.70
40	08	31.3	10.72	32.31	.78	6.46	1.0	6.50	1.17	10.20
40	09	20.9	16.14	31.70		5.52		.80	.79	3.70
40	10	11.3	16.54	31.94		5.84		.20	.67	3.50
41	01	153.3	6.70	33.89		1.86		34.60	2.87	58.60
41	02	124.4	6.79	33.86		2.03		34.00	3.19	57.50
41	03	101.8	7.10	33.75		2.67		30.90	2.90	47.40

DATA BASE LISTING: CRUISE 81-07, STATION 1 TO STATION 45. PAGE 4
* - Indicates that data is from an electronic sensor.

STN NO.	BOT NO.	DEPTH (dbar)	TEMP * (deg C)	SAL'TY* (ppt)	CHL A (mg/m3)	OXY (ml/l)	14C PRD mg/m3/h	NO3 (uM/l)	PO4 (uM/l)	SiO4 (uM/l)
41	04	76.8	7.53	33.38		4.00		25.20	2.40	34.20
41	05	49.5	8.39	32.87		3.67		26.20	2.48	39.50
41	06	29.3	9.72	32.43		5.13		19.60	2.04	30.20
41	07	16.5	11.36	32.23		5.78		12.60	1.55	20.70
41	08	7.5	13.09	32.06	7.65	6.91	33.4	5.60	1.06	15.10
41	09	5.8	13.11	32.05	7.20	6.97	30.1	6.70	1.00	
43	01	246.7	6.66	34.00		1.93		34.60	2.77	58.90
43	02	199.0	6.70	33.97		1.87		34.20	3.03	58.00
43	03	147.3	6.90	33.89		2.19		32.90	2.90	53.80
43	04	124.0	6.92	33.83		2.14		33.20	2.85	54.30
43	05	97.8	7.05	33.73		2.42		32.20	2.74	50.80
43	06	74.3	7.43	33.50		3.56		26.80	2.28	37.80
43	07	49.0	7.98	33.01		4.29		23.00	1.98	30.40
43	08	33.4	8.80	32.79		3.40		27.40	2.30	42.20
43	09	23.1	9.86	32.44		3.88		24.80	2.12	41.00
45	01	164.3	6.89	33.89		2.05		33.40	2.66	54.60
45	02	126.0	6.89	33.86		2.03		33.70	2.75	54.60
45	03	98.6	6.98	33.75		2.06		33.50	2.72	54.10
45	04	75.1	7.42	33.54		2.70		30.70	2.47	47.20
45	05	48.8	8.05	33.06		2.94		30.00	2.42	47.40
45	06	28.9	8.49	32.77				29.10	2.39	48.10
45	07	17.9	9.17	32.33		3.59		28.30	2.34	48.30
45	08	7.5	9.38	32.17	.37	4.10		27.70	2.23	48.50

ZOOPLANKTON HAUL RESULTS - CRUISE P1-65 STANDARD LIST - STATIONS 1 TO 33 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	1	5	9	13	15	30	33
AMPHIPODS*							
UNIDENTIFIED JUVENILES						218.472	
PARATHEMISTO SP.			4.76190	6.16650	11.4916	11.1012	5.06462
EUPRIMNO SP.					5.74581	11.1012	
CYPHOCARIS SP.						16.6519	
CHAETOGNATHS*							
UNIDENTIFIED JUVENILES	656.983	720.079	166.667	311.100	112.330	192.829	75.9693
SAGITTA ELEGANS	234.637	66.7103	290.476	67.8314	17.2374	55.5062	167.132
EUKROHNIA HAMATA	5.58659		52.3810	1076.05	126.408	1049.62	50.6462
CTENOPHORES*							
PLEUROBRACHIA SP.	33.5196	90.2551	52.3810			5.55062	131.680
EGGS LARVA*							
UNIDENTIFIED EGGS.	5310.61	1559.45		1106.74	380.602	1443.16	
COPEPOD NAUPLII			600.000				638.142
BARNACLE NAUPLII	2147.49						
EUPHAUSID LARVA	4708.38	1559.45	10252.4		1522.06	2169.74	
DECAPOD LARVA	39.1061	27.4689	14.2857				10.1292
EUPHAUSIUS*							
JUVENILES		431.655	19.0476	12.3330	22.9832	49.9556	60.7754
EUPHAUSIA PACIFICA					5.74581		
THYSANOESSA SPINIFERA						5.55062	
LARVACEANS*							
LARVACEANS	2147.49	259.935	1200.00	369.496		2169.74	638.142
MEDUSAE*							
PHIALIDIUM SP.	346.369	66.7103	195.238	18.4995			303.677
AGLANTHA SP.				6.16650	11.4916		
PROBOSCIDACTYLA SP.	11.1732			6.16650			
OSTRACODS*							
CONCHOECIA SP.					1716.27		
COPEPODS*							
ACARTIA LONGIREMIS <=S4/5	1073.74	259.935		369.496			
ACARTIA LONGIREMIS SUM	357.877	779.765				722.691	
ACARTIA LONGIREMIS SUF	715.862	259.935	1200.00				638.142
CALANUS MARSHALLAE S3	1900.00	1469.20	6195.24	859.609	68.9497	305.839	2073.45

ZOOPLANKTON HAUL RESULTS - CRUISE R1-85 STANDARD LIST - STATIONS 1 TO 33 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 1	5	9	13	15	30	33
CALANUS MARSHALLAE S4	3373.74	1916.15	13866.7	1718.60	344.748	305.839	3987.88
CALANUS MARSHALLAE S5	906.380	1437.02	6785.71	4965.26	735.463	524.312	7019.56
CALANUS MARSHALLAE S6M	216.257	446.959	1475.24	2482.63	45.9664		797.677
CALANUS MARSHALLAE S6F	475.754	510.922	6195.24	668.448	160.883		797.677
CALANUS PACIFICUS <=S5						43.6834	
CALANUS SP. S1/2	5368.16	2079.40	7800.00	369.496	761.319	723.246	1276.28
CALANUS TENUICORNIS <=S4					665.939		
CALANUS TENUICORNIS S5				190.976	570.673	567.995	
CALANUS TENUICORNIS S6M				95.4573	570.673	349.523	
CALANUS TENUICORNIS S6F		351.268	295.238	95.4573	285.337	436.869	638.142
CENTROPAGES ABDOMINALIS <=S4	1431.84						
CENTROPAGES ABDOMINALIS S5			3000.48				
CENTROPAGES ABDOMINALIS S6M	2863.13		600.000				
CENTROPAGES ABDOMINALIS S6F	3584.36	31.9424					
EUCALANUS BUNGI S1/2	43.2402		4.76190				
EUCALANUS BUNGI S3	5.58659	7.98827	9.52381	107.790		443.883	10.1292
EUCALANUS BUNGI S4	11.1732	43.7148	47.6190	67.6314	51.7123	122.114	5.06462
EUCALANUS BUNGI S5M	5.58659		19.0476	80.1644	74.6955	22.2025	10.1292
EUCALANUS BUNGI S5F			14.2857	80.1644	45.9664	122.114	5.06462
EUCALANUS BUNGI S6M				43.1655	5.74581	44.4050	
EUCALANUS BUNGI S6F		3.92413	9.52381	221.994	149.391	263.082	15.1939
EUCHAETA JAPONICA S1/2					22.9832	131.050	
EUCHAETA JAPONICA S3				12.3330	5.74581	65.8859	
EUCHAETA JAPONICA S4				43.1655	45.9664		
EUCHAETA JAPONICA S5M				30.8325	28.7290		
EUCHAETA JAPONICA S5F				12.3330	11.4916		
EUCHAETA JAPONICA S6M					5.74581		
EUCHAETA JAPONICA S6F					17.2374		
METRIDIA SP. <=S3			1800.48	3695.15	380.602	2169.74	
METRIDIA SP. S4			600.000	369.496		723.246	3829.36
METRIDIA PACIFICA S5M			600.000	381.953	665.939		1276.28
METRIDIA PACIFICA S5F				668.448	665.939		1276.28
METRIDIA PACIFICA S6M			2400.48	2673.79	190.244		
METRIDIA PACIFICA S6F			600.000	3342.24	2758.56	723.246	2553.07

ZOOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 1 TO 33 PAGE 3
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 1	5	9	13	15	30	33
NEOCALANUS CRISTATUS S3			4.76190	86.3309	34.4748	61.0568	
NEOCALANUS CRISTATUS S4			4.76190	191.161	28.7290	93.6390	35.4523
NEOCALANUS CRISTATUS S5				135.663	28.7290	77.7087	15.1939
NEOCALANUS PLUMCHRUS S2					160.883	131.050	
NEOCALANUS PLUMCHRUS S3		31.9424		95.4573	339.003	87.3668	
NEOCALANUS PLUMCHRUS S4	11.1732	7.84827	28.5714	271.326	591.818	550.788	169.665
NEOCALANUS PLUMCHRUS S5	27.9330	11.7724	71.4286	1245.63	293.036	177.620	86.0985
OITHONA HELGOLANDICA	15027.9	20272.1	39004.8	2956.22	52522.4	74494.9	56804.6
OITHONA SPINIROSTRIS			600.000	1108.74	1141.69		638.142
PARACALANUS SP. <=S4		259.935	1200.00	369.496			
PARACALANUS SP. S5	6083.80	3118.90	5400.00	1847.48	1141.69	3614.56	1914.93
PARACALANUS SP. S6M	2147.49	519.948	600.000		380.602		
PARACALANUS SP. S6F	3579.33	2859.12	1200.00	738.746	1522.64	1446.49	1914.93
PSEUDOCALANUS SP. <=S3	17536.3	12474.8	19800.0	26972.2	11037.7	26038.0	51061.5
PSEUDOCALANUS SP. S4	16462.6	8319.16	11400.0	13301.1	10658.5	48456.9	44680.1
PSEUDOCALANUS SP. S5M	6798.88	3379.07	8400.00	3325.59	4566.77	39054.2	26168.9
PSEUDOCALANUS SP. S5F	8944.13	5199.48	10200.0	2956.22	7992.42	36883.9	30635.9
PSEUDOCALANUS SP. S6M	6586.59	3379.07	19004.8	2956.10	3425.07	5062.72	7019.56
PSEUDOCALANUS SP. S6F	26480.4	19494.0	59409.5	13671.1	7233.97	28208.3	30635.9
SCOLECITHRICELLA MINOR S5				739.363	380.602		
SCOLECITHRICELLA MINOR S6F		259.935					638.142

ZOOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 1 TO 33 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 1	5	9	13	15	30	33
ACTIDEUS ARMATUS S6F					5.74581		
BARNACLE CYPRIDS						728.797	
BIVALVE LARVA	715.084						
CALANUS MARSHALLAE/PACIFICUS S6F		63.6849					
CALANUS MARSHALLAE/PACIFICUS <=S5		31.9424		190.976			159.535
CANDACIA COLUMBIAE S6F					5.74581		
CANDACIA COLUMBIAE S6M					5.74581	5.55062	
CEPHALOPOD		3.92413					
CLAUSOCALANUS SP. S6F				1847.48	3869.23	7954.04	638.142
CLAUSOCALANUS SP. S5				2586.84	1141.75		
CLAUSOCALANUS SP. <=S4					380.602		
CLIONE SP.	5.58659			6.16650			5.06462
CORYCAEUS SP.	1431.84	779.725					
ECHINOPLUTEUS LARVAE		259.935	1200.00	369.496			
EPILABIDOCERA AMPHITRITE S6F	5.58659						
EPILABIDOCERA AMPHITRITE S6M	5.58659		4.76190				
EUCHIRELLA SP. S6F					22.9832	5.55062	
EUCHIRELLA SP. S6M						16.6519	
EUCHIRELLA SP. S5				369.496	17.2374	5.55062	
EUCHIRELLA SP. <=S4					5.74581		
FISH EGGS					380.602		10.1292
GAETANUS SP. S6F					57.4581		
GAETANUS SP. S5					28.7290		
GAETANUS SP. <=S4					28.7290	43.6834	
GAIDIUS VARIABLIS S6F					11.4916		
GAIDIUS VARIABLIS <=S4						43.6834	
HETERORHABDUS TANNERI S6F					5.74581		
HETERORHABDUS TANNERI S6M					5.74581	27.7531	
HETERORHABDUS TANNERI S5						16.6519	
LUCICUTIA SP. S6						87.3668	
MICROCALANUS SP. S5				1847.48	3044.70		
MICROCALANUS SP. S6F			600.000	2216.86	380.602		
ONCAEA SP.				739.363	761.319	723.246	
PERACLIS SP.	1431.84	259.935					

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 1	5	9	13	15	30	33
PLEUROMAMMA SP.				6.16650	11.4916	27.7531	
POLYCHAETE LARVAE	1073.74		600.000	6.16650	380.602		
RACOVITZANUS ANTARCTICUS S6F					80.4413	38.8544	
SAGITTA SCHIPPSAE					5.74581	5.55062	
SALP					5.74581		
SCAPHOCALANUS SP. S6F					28.7290		
SCAPHOCALANUS SP. S5						43.6834	
SIPHONOPHORE PLANULA				6.16650	17.2374	38.8544	
SIPHONOPHORE PNEUMATOPHORE						5.55062	
SPINOCALANUS BREVICAUDATUS S5					380.602		
TOMOPTERIS SEPTENTRIONALIS				55.4985		16.6519	
UNIDENTIFIED MEDUSAE	11.1732		9.52381		11.4916		
LIMACINA SP.	1437.43	2087.25	21000.0	2174.31	3863.48	8986.46	1114.22

ZOOPLANKTON HAUL RESULTS - CRUISE P1-05 STANDARD LIST - STATIONS 36 TO 45 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	36	39	41	42	43	44	45
AMPHIPODS*							
UNIDENTIFIED JUVENILES				3.76464			
PARATHEMISTO SP.	5.49034		11.1732			10.7914	361.135
EUPRIMNO SP.							5.28053
CHAETOGNATHS*							
UNIDENTIFIED JUVENILES	477.448	1848.39	5068.16	7.52928	719.712	124.101	503.710
SAGITTA ELEGANS	597.467	22.7656	1486.03	286.113	1091.37	329.137	961.056
EUKROHNIA HAMATA	43.9238	5.05962	44.6927	18.8232	62.5899	16.1871	63.3663
CTENOPHORES*							
PLEUROBRACHIA SP.	76.8648	113.828	407.821	30.1171	88.4892	32.3741	10.5611
EGGS LARVA*							
UNIDENTIFIED EGGS.	9185.35		19005.6		719.712	1482.73	3856.37
COPEPOD NAUPLII	2041.31	3065.77	4224.02	11.2939	1440.01		350.574
BARNACLE NAUPLII	3061.42	681.703	703.911	3.76464			
EUPHAUSID LARVA	6478.61	1022.43	15486.0	1475.10	10078.3	2964.93	1051.88
DECAPOD LARVA	664.112	48.0667	770.950	30.1171	11.7986	10.7914	26.4026
EUPHAUSIDS*							
JUVENILES	258.046	20.2361	223.464	45.1757	218.273	97.1223	873.399
EUPHAUSIA PACIFICA	16.4710		16.7598				15.8416
THYSANOESSA SPINIFERA				7.52928			15.8416
LARVACEANS*							
LARVACEANS	6462.14	1703.88	703.911	2969.02	11515.4	2981.12	4061.32
COPEPODS*							
ACARTIA LONGIREMIS <=S3/4	1020.65	681.703	1407.82				
ACARTIA LONGIREMIS <=S4/5	3061.42	2.52951	4223.46	491.926	1440.01		
ACARTIA LONGIREMIS S6M	340.182	1022.43	6335.28	491.662		741.367	
ACARTIA LONGIREMIS S6F	2361.16		4928.49	491.662			350.574
CALANUS MARSHALLAE S3	1003.64	1926.22	4500.00	2249.37	3890.58	3310.79	1069.31
CALANUS MARSHALLAE S4	2341.63	2219.39	4500.00	5646.96	5305.81	4294.96	1604.22
CALANUS MARSHALLAE S5	6857.44	1884.23	14882.7	2456.43	13792.5	1879.32	12477.9
CALANUS MARSHALLAE S6M	6187.62	83.7521	4153.63	245.831	3537.21	805.576	2851.49
CALANUS MARSHALLAE S6F	7022.15	293.170	7268.16	1105.30	6719.28	536.870	7487.79
CALANUS PACIFICUS <=S5							176.218
CALANUS SP. S1/2	1020.65	2385.83	9854.75	7499.66	2159.73	2586.69	

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 36	39	41	42	43	44	45
CALANUS TENUICORNIS S5					5.89928		
CALANUS TENUICORNIS S6M	5.49034	41.6634			719.712		
CALANUS TENUICORNIS S6F	2392.14			7.52928	11.7986	364.209	717.096
CENTROPAGES ABDOMINALIS <=S4	1003.64		2816.20		7197.12		350.574
CENTROPAGES ABDOMINALIS S5	340.182				2879.44		701.254
CENTROPAGES ABDOMINALIS S6M	680.363	340.725	2112.29				350.574
CENTROPAGES ABDOMINALIS S6F	1722.87		2112.29	7.52928	1451.81		
EUCALANUS BUNGI S3		5.05902	5.58659	15.0586	11.7986	5.39568	
EUCALANUS BUNGI S4	5.49034	2.52951	22.3464	45.1757	17.6978	16.1871	5.28053
EUCALANUS BUNGI S5M	5.49034	10.1180	83.7989	15.0586	23.5971	5.39568	5.28053
EUCALANUS BUNGI S5F		5.05902	50.2793	26.3525	29.4964		5.28053
EUCALANUS BUNGI S6M		2.52951		3.76464	5.89928		
EUCALANUS BUNGI S6F	32.9421		61.4525	15.0586	17.6978		26.4026
EUCHAETA JAPONICA S5M		2.52951					
EUCHAETA JAPONICA S5F		2.52951					
METRIDIA SP. <=S3	4082.07	340.801	4928.49				1402.51
METRIDIA SP. S4	3741.67	681.577	1407.82		2879.44	370.629	701.254
METRIDIA PACIFICA S5M	2381.16	681.703	703.911	249.934	2885.34	1128.24	701.254
METRIDIA PACIFICA S5F	1700.91	340.725	1407.82	764.975	719.712	1117.45	1402.51
METRIDIA PACIFICA S6M	3741.67		2112.29	249.934	5.89928	746.763	1753.14
METRIDIA PACIFICA S6F	6803.63	1363.15		791.327	2501.88	833.094	1051.88
NEOCALANUS CRISTATUS S3	10.9807			18.8232		5.39568	
NEOCALANUS CRISTATUS S4	5.49034	2.52951	5.58659	26.3525	11.7986	46.5612	95.0495
NEOCALANUS CRISTATUS S5	27.4517	5.05902		3.76464	5.89928	5.39568	31.6832
NEOCALANUS PLUMCHRUS S4	345.672	7.58853	710.056	514.250	11.7986	26.9784	350.574
NEOCALANUS PLUMCHRUS S5	247.066	5.05902	229.050	67.7635	224.173	191.978	934.653
OITHONA HELGOLANDICA	48304.1	2726.31	29860.3	32451.2	23036.7	21495.9	17177.6
OITHONA SPINIROSTRIS	340.182		1407.82			370.629	
PARACALANUS SP. <=S4			703.911	491.662		370.629	
PARACALANUS SP. S5	340.182	2726.31	7743.02	491.662	1440.01	1112.05	2454.39
PARACALANUS SP. S6M	680.254	340.725					
PARACALANUS SP. S6F	1700.91	1703.95	7743.02	1474.99	3599.15	1852.88	2103.76
PSEUDOCALANUS SP. <=S3	17924.3	25559.2	33793.3	22124.8	42468.9	26314.7	19981.5
PSEUDOCALANUS SP. S4	12583.9	11565.2	18307.3	21142.2	41755.1	30021.6	22790.6

ZOOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 36 TO 45 PAGE 3
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.		36	39	41	42	43	44	45
PSEUDOCALANUS SP.	S5M	3741.67	7636.95	19709.5	10815.4	26635.3	11859.7	12271.9
PSEUDOCALANUS SP.	S5F	4422.47	8177.91	17603.4	14749.9	25915.5	17050.4	13671.3
PSEUDOCALANUS SP.	S6M	14295.4	11246.0	38720.7	15732.4	42474.8	21868.7	36810.6
PSEUDOCALANUS SP.	S6F	14966.7	14994.7	27452.5	75228.8	83504.3	42992.8	49431.0
SCOLECITHRICELLA MINOR	<=S4	340.182				719.712		
SCOLECITHRICELLA MINOR	S5	1020.65						350.574
SCOLECITHRICELLA MINOR	S6F		340.725	1407.62				350.574

ZOOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 36 TO 45 PAGE 1

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	36	39	41	42	43	44	45
BARNACLE CYPRIUS	680.254						
BIVALVE LARVA	680.254		2112.12		719.712	741.367	
BRADYIDIUS SP. S6F			5.58659				5.28053
BRADYIDIUS SP. S5		83.7521					
CALANUS MARSHALLAE/PACIFICUS <=S5	2721.56		1407.82	1966.65	1440.01	1852.88	1402.51
CLAUSOCALANUS SP. S6F						370.629	
CLAUSOCALANUS SP. S5	340.182	681.577	1407.82		1440.01	370.629	
CORYCAEUS SP.				3.76464			
CYMBULIDAE		340.725	2816.20				
ECHINOPLUTEUS LARVAE				7.52928	5.89928		
EPILABIDOCERA AMPHITRITE S6M	10.9807						5.28053
EUCHIRELLA SP. S6F	5.49034						
EUCHIRELLA SP. S5	5.49034	10.1180		3.76464	5.89928		
FISH LARVAE							5.28053
GAETANUS SP. S6F							5.28053
GAIDIUS VARIABILIS S6F							2454.39
MICROCALANUS SP. S5	1020.65						1753.14
MICROCALANUS SP. S6F	680.254		2816.20				
MYSID			5.58659				1753.14
ONCAEA SP.			703.911				
PERACLIS SP.					719.712		350.574
POLYCHAETE LARVAE	1706.40	2.52951	709.497				
RACOVITZANUS ANTARCTICUS S6F			5.58659				
SAGITTA SCRIPPSAE	5.49034		11.1732				350.574
SCAPHOCALANUS SP. S5					5.89928		
SIPHONOPHORE PLANULA						5.39568	
SIPHONOPHORE PNEUMATOPHORE							
TOMOPTERIS SEPTENTRIONALIS	5.49034						
UNIDENTIFIED AMPHIPOD			5.58659				
UNIDENTIFIED EUPHASID				15.0586			
UNIDENTIFIED MEDUSAE	5.49034	12.6476	727.374		719.712	370.629	5.28053
LIMACINA SP.	7494.32	681.703	15793.3	2004.29	14518.1	8595.32	6040.92

ZOOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 46 TO 52 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	46	47	48	49	50	51	52
AMPHIPODS*							
UNIDENTIFIED JUVENILES				342.687			
PARATHEMISTO SP.	10.2257	2.85714			5.24476	5.65262	17.9856
EUPRIMNO SP.	5.11283						
CHAETOGNATHS*							
UNIDENTIFIED JUVENILES	1457.84	2608.86	1809.31	990.662	141.606	1894.76	509.592
SAGITTA ELEGANS	991.064	817.143	741.801	685.802	241.259	819.630	1235.01
EUKROHNIA HAMATA	56.2412	17.1420	470.256	80.3674	20.9790	22.6105	29.9760
CTENOPHORES*							
PLEUROBRACHIA SP.	5.11283	68.5714	105.808	10.7157	68.1818		17.9856
EGGS LARVA*							
UNIDENTIFIED EGGS.	7662.79		11274.4	996.020	54340.9	9598.15	5468.23
COPEPOD NAUPLII	2534.94		1410.77	331.971	1927.97		2343.53
BARNACLE NAUPLII							1562.35
EUPHAUSID LARVA	1267.47	4542.86	11274.4	2987.52	7033.22	2550.46	4687.05
DECAPOD LARVA	20.4513	60.0000	2895.02	364.118	10.4895	5.65262	23.9808
EUPHAUSIDS*							
JUVENILES	3455.25	1645.71	1433.11	1580.02	157.343		929.257
EUPHAUSIA PACIFICA				10.7157	5.24476	39.5683	5.99520
THYSANOESSA SPINIFERA		8.57143			10.4895	5.65262	17.9856
LARVACEANS*							
LARVACEANS	4262.57	4665.71	28186.0	2516.57	2563.04	749.538	2463.43
COPEPODS*							
ACARTIA CLAUSII <=S5			1409.59				
ACARTIA LONGIREMIS <=S3/4	1267.47	757.143	2818.60	331.971	639.336		
ACARTIA LONGIREMIS <=S4/5	1267.47	757.143	9863.63				781.175
ACARTIA LONGIREMIS S6M		757.143			639.336		
ACARTIA LONGIREMIS S6F			1409.59	331.971		2214.70	
CALANUS MARSHALLAE S3	4362.27	1281.14	6448.39	1687.72	4153.85	2214.70	6145.08
CALANUS MARSHALLAE S4	13707.5	2745.43	10028.2	3206.12	4473.25	6641.83	3840.53
CALANUS MARSHALLAE S5	19316.3	7137.14	40118.7	7763.49	7027.97	42083.8	16516.8
CALANUS MARSHALLAE S6M	11217.6	1830.20	11462.5	3037.35	3514.51	11814.0	8830.94
CALANUS MARSHALLAE S6F	10593.8	4025.71	15048.2	5231.38	3035.66	16240.0	16516.8
CALANUS PACIFICUS <=S5				167.700			

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	46	47	48	49	50	51	52
CALANUS SP. S1/2	1869.25	366.000	9863.63	3651.36	10227.3	5168.19	3124.70
CALANUS TENUICORNIS S5		366.000		168.772			
CALANUS TENUICORNIS S6M				337.543			
CALANUS TENUICORNIS S6F	623.255			168.772		738.232	384.053
CENTROPAGES ABDOMINALIS <=S4	1267.47	10600.0	38055.5	996.020	5753.50	1476.46	781.175
CENTROPAGES ABDOMINALIS S5		6814.29	31007.5	331.971	3196.15		
CENTROPAGES ABDOMINALIS S6M		757.143	12685.2		639.336		
CENTROPAGES ABDOMINALIS S6F		14.2857	5661.30	331.971	639.336	5.65262	
EUCALANUS BUNGI S3			17.6346	5.35783	36.7133		5.99520
EUCALANUS BUNGI S4	5.11283	8.57143	47.0256	10.7157	20.9790	22.6105	11.9904
EUCALANUS BUNGI S5M	25.5642	14.2857	82.2948	26.7891	15.7343	11.3052	11.9904
EUCALANUS BUNGI S5F	25.5642	25.7143	99.9295	21.4313	20.9790	11.3052	35.9712
EUCALANUS BUNGI S6M			17.6346	10.7157	5.24476		11.9904
EUCALANUS BUNGI S6F	20.4513	14.2857	205.737	75.0096	47.2028	5.65262	23.9808
EUCHAETA JAPONICA S3		2.85714					
EUCHAETA JAPONICA S4		2.85714	1411.36				
EUCHAETA JAPONICA S5M			5.87820				
EUCHAETA JAPONICA S5F			11.7564				5.99520
EUCHAETA JAPONICA S6F			5.87820				
METRIDIA SP. <=S3	1267.47		1409.59	5311.21		2214.70	781.175
METRIDIA SP. S4	1267.47		2418.60	996.020		3691.73	781.175
METRIDIA PACIFICA S5M	1267.47				1278.67		781.175
METRIDIA PACIFICA S5F					639.140		1562.35
METRIDIA PACIFICA S6M	5069.89	757.143	4228.19	1992.04	639.336	738.232	4687.05
METRIDIA PACIFICA S6F	3802.42	757.143	11274.4	3651.36	639.336	13289.3	7811.75
NEOCALANUS CRISTATUS S3		2.85714				5.65262	
NEOCALANUS CRISTATUS S4	51.1283	11.4286		26.7891	84.9650	22.6105	17.9856
NEOCALANUS CRISTATUS S5	5.11283	5.71429	188.103	64.2939	10.4895	175.231	23.9808
NEOCALANUS PLUMCHRUS S4	1267.47	5.71429		5.35783	79.7727		
NEOCALANUS PLUMCHRUS S5	495.945	129.571	317.423	415.252	1762.24	559.609	197.842
OITHONA HELGOLANDICA	41628.1	24231.4	16911.6	15934.2	17260.0	56107.9	21091.1
OITHONA SPINIROSTRIS	1267.47	757.143	1409.59	1327.67		738.232	1562.35
PARACALANUS SP. <=S4		757.143		1659.85		1476.46	1562.35
PARACALANUS SP. S5		757.143	5637.76	1992.04	1278.67	2214.70	3124.70

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	46	47	48	49	50	51	52
PARACALANUS SP. S6M	1267.47	1514.57	4228.19	1659.85	639.336	2214.70	
PARACALANUS SP. S6F	1267.47	4542.66	5637.76	6970.53	2556.82	2952.93	1562.35
PSEUDOCALANUS SP. <=S3	48162.9	40891.4	38049.6	7967.09	30047.2	17721.0	31247.0
PSEUDOCALANUS SP. S4	43096.1	23474.3	57728.6	10292.4	50501.7	14029.8	42182.3
PSEUDOCALANUS SP. S5M	58306.6	9842.66	36644.7	6306.16	30681.8	8857.66	27883.7
PSEUDOCALANUS SP. S5F	32957.3	12117.1	26781.1	6970.53	38994.8	12548.8	22655.9
PSEUDOCALANUS SP. S6M	19014.6	24231.4	35234.0	22572.5	26208.0	25838.1	21091.1
PSEUDOCALANUS SP. S6F	65909.6	49220.3	66241.5	40167.6	53695.8	36911.6	74208.6
SCOLECITHRICELLA MINOR <=S4	1267.47			331.971			781.175
SCOLECITHRICELLA MINOR S5				331.971	639.336		781.175
SCOLECITHRICELLA MINOR S6F	1267.47		2818.60		1917.48	1476.46	

ZOOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 46 TO 52 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 46	47	48	49	50	51	52
AEGISTHUS SP.							
AETIDEUS ARMATUS S6F		2.85714	11.7564	5.35783			
BARNACLE CYPRIDS				663.835			
BIVALVE LARVA		757.143		663.835	1917.48	738.232	1562.35
CALANUS MARSHALLAE/PACIFICUS S6F				168.772			
CALANUS MARSHALLAE/PACIFICUS <=S5					639.336		
CANDACIA COLUMBIAE S6F		5.71429					
CLAUSOCALANUS SP. S6F	3802.42			331.971	639.336	2214.70	3905.68
CLAUSOCALANUS SP. S5	3802.42						2343.53
CORYCAEUS SP.		2271.43	1409.59	331.971		1476.52	781.175
EPILABIDOCERA AMPHITRITE S6F		2.85714	5.87820				
EPILABIDOCERA AMPHITRITE S6M						5.65262	
EUCHIRELLA SP. S6F				10.7157	10.4895	5.65262	
EUCHIRELLA SP. S5				5.35783	5.24476		
FISH LARVAE	5.11283	8.57143	5.87820	5.35783	5.24476	5.65262	11.9904
GAETANUS SP. S6F			5.87820				
GAETANUS SP. <=S4			1409.59				
GAIDIUS VARIABLIS S6F			5.87820				
HETERORHABDUS SP. S6M			5.87820				
MICROCALANUS SP. S5			1409.59				
MICROCALANUS SP. S6F			1409.59	663.835	639.336		781.175
MICROCALANUS SP. S6M	1267.47						
MYSID			23.5128				
ONCAEA SP.	2534.94		2816.60	331.971			1562.35
PERACLIS SP.		757.143				738.232	
POLYCHAETE LARVAE		762.000	1411.36				781.175
SAGITTA SCRIPPSAE	5.11283		23.5128			39.5683	11.9904
SIPHONOPHORE PLANULA	5.11283	5.71429				738.232	
SIPHONOPHORE PNEUMATOPHORE						5.65262	781.175
SPINOCALANUS BREVICAUDATUS S5			1409.59				781.175
TOMOPTERIS SEPTENTRIONALIS	5.11283			5.35783	5.24476		5.99520
UNIDENTIFIED COPEPODITES			2818.60				
UNIDENTIFIED MEDUSAE	10.2257	2.85714			5.24476		5.99520
LIMACINA SP.	2667.6	2785.7	1409.59	5027.78	9613.64	7399.28	8591.13

ZOOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 53 TO 57 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	53	54	55	56	57
AMPHIPODS*					
PARATHEMISTO SP.	5.42547		11.7564		
CYPHOCARIS SP.					11.1511
CHAETOGNATHS*					
UNIDENTIFIED JUVENILES	1860.47	460.432	1939.81	1634.69	345.663
SAGITTA ELEGANS	108.509	379.856	2192.57	710.248	457.194
EUKROHNIA HAMATA	5.42547	40.2878	1134.49	570.435	295.504
CTENOPHORES*					
PLEUROBRACHIA SP.	206.168	218.705	35.2692	61.5175	39.0288
EGGS LARVA*					
UNIDENTIFIED EGGS.	4241.63	9306.47	15559.6	17554.9	3054.84
COPEPOD NAUPLII	1413.88	12402.9	2963.20	4298.96	2290.99
BARNACLE NAUPLII			740.654	1074.88	2672.91
EUPHAUSID LARVA	10606.6	6998.56	2222.55	20423.8	13749.3
DECAPOD LARVA	21.7019	287.770	2069.13	744.362	510.106
EUPHAUSIDS*					
JUVENILES	37.9783	23.0216	11.7564		
EUPHAUSIA PACIFICA			70.5384		
THYSANOESSA SPINIFERA	5.42547		11.7564	11.1850	5.57554
LARVACEANS*					
LARVACEANS	12028.3	3118.85	2222.55	10748.8	3054.84
MEDUSAE*					
PHIALIDIUM SP.	130.211	63.3094	52.9038	1281.60	111.511
AGLANTHA SP.			141.077		11.1511
PROBOSCIDACTYLA SP.	5.42547				
OSTRACODS*					
CONCHOECIA SP.			740.654	1791.28	
COPEPODS*					
ACARTIA CLAUSII S6F		775.252		358.479	
ACARTIA LONGIREMIS <=S3/4				716.400	1689.39
ACARTIA LONGIREMIS <=S4/5		2326.33	740.654	3941.04	2440.41
ACARTIA LONGIREMIS S6M	2427.76	2326.33	1481.31	1074.88	3379.33
ACARTIA LONGIREMIS S6F		775.252	3703.96	1791.28	2440.41
CALANUS MARSHALLAE S3	4400.60	4695.47	2549.38	352.272	738.201

(VALUES ARE NUMBER OF ORGANISMS/50. METER)

STATION I.D.	: 53	54	55	56	57
CALANUS MARSHALLAE S4	2065.48	4685.47	2913.83	864.042	461.487
CALANUS MARSHALLAE S5	1257.62	4123.17	15659.5	4051.21	2768.91
CALANUS MARSHALLAE S6M	359.275	1499.28	10198.7	8278.58	4190.02
CALANUS MARSHALLAE S6F	269.429	3936.12	24406.3	9687.89	3784.12
CALANUS SP. S1/2	6358.65	9306.47	5185.75	3224.64	1527.14
CALANUS TENUICORNIS S6M	89.7900				92.2752
CENTROPAGES ABDOMINALIS <=S4	4948.63	3101.58	740.654	1074.88	2290.99
CENTROPAGES ABDOMINALIS S5	706.939				1145.77
CENTROPAGES ABDOMINALIS S6M		775.252	740.654	358.479	2302.14
CENTROPAGES ABDOMINALIS S6F	16.3000	775.252		5.59250	1240.56
EUCALANUS BUNGI S3	5.42547	5.75540	5.87820	5.59250	5.57554
EUCALANUS BUNGI S4	5.42547	11.5108	52.9038	27.9625	16.7266
EUCALANUS BUNGI S5M			76.4166	33.5550	39.0288
EUCALANUS BUNGI S5F		5.75540	64.6602	100.665	33.4532
EUCALANUS BUNGI S6M			11.7564	27.9625	5.57554
EUCALANUS BUNGI S6F			123.442	89.4800	39.0288
EUCHAETA JAPONICA S4				16.7775	
EUCHAETA JAPONICA S5M			5.87820	22.3700	11.1511
EUCHAETA JAPONICA S5F			11.7564	50.3325	11.1511
EUCHAETA JAPONICA S6M			11.7564		
METRIDIA SP. <=S3		775.252		358.479	1527.70
METRIDIA SP. S4	1413.88		740.654	1791.28	
METRIDIA PACIFICA S5M		775.252	728.897		
METRIDIA PACIFICA S5F		775.252	364.213	1074.88	
METRIDIA PACIFICA S6M		775.252	3642.13	4607.10	2291.55
METRIDIA PACIFICA S6F	706.939		25493.8	1433.36	381.869
NEOCALANUS CRISTATUS S4		11.5108	5.87820		
NEOCALANUS CRISTATUS S5			235.128	50.3325	5.57554
NEOCALANUS PLUMCHRUS S4		5.75540		716.400	797.302
NEOCALANUS PLUMCHRUS S5	21.7019	17.2662	1922.17	923.322	94.7842
NEOCALANUS PLUMCHRUS S6F					5.57554
OITHONA HELGOLANDICA	2757.2	1705.0	19262.9	8595.68	8402.34
OITHONA SPINIROSTRIS		775.252	2222.55	1791.28	763.849
PARACALANUS SP. <=S4		1551.08			

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.		: 53	54	55	56	57
PARACALANUS SP.	S5	1413.88	6975.54	1481.31	716.400	
PARACALANUS SP.	S6M	706.939		2222.55	716.400	
PARACALANUS SP.	S6F	3534.69	2326.33	740.654	716.400	
PSEUDOCALANUS SP.	<=S3	43832.4	28690.6	69633.2	45142.7	63003.6
PSEUDOCALANUS SP.	S4	36052.3	64356.8	41482.5	13612.2	9930.04
PSEUDOCALANUS SP.	S5M	18391.5	40322.3	15553.7	4298.96	3818.69
PSEUDOCALANUS SP.	S5F	14138.8	36443.2	14813.1	3224.64	2290.99
PSEUDOCALANUS SP.	S6M	25450.9	27136.7	8867.84	6090.24	3818.69
PSEUDOCALANUS SP.	S6F	40295.0	71337.0	20003.5	9317.11	5345.83
SCOLECITHRICELLA MINOR	<=S4		775.252		358.256	
SCOLECITHRICELLA MINOR	S5				358.256	
SCOLECITHRICELLA MINOR	S6M				716.511	
SCOLECITHRICELLA MINOR	S6F	706.939		740.654	716.400	

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 53	54	55	56	57
BARNACLE CYPRIDS			740.654		
BIVALVE LARVA	706.939		740.654	716.400	
CALANUS MARSHALLAE/PACIFICUS <=S5	89.7915				92.2752
CARDACIA COLUMBIAE S6M				11.1850	
CEPHALOPOD				5.59250	
CLAUSOCALANUS SP. S6F	1413.88		1481.31		
CLAUSOCALANUS SP. S5		775.252			
CORYCAEUS SP.	2120.82	1551.08			
CRYPTONISCID				5.59250	763.840
CUMACEA			5.47820		
ECHINOPLUTEUS LARVAE		775.252		358.256	
EPILABIDOCERA AMPHITRITE <=S4					5.57554
EPILABIDOCERA AMPHITRITE S6F			5.47820		11.1511
EPILABIDOCERA AMPHITRITE S6M		5.75540		5.59250	16.7266
EUCHIRELLA SP. S6F			5.47820		
EUCHIRELLA SP. S5				5.59250	
FISH LARVAE	5.42547	5.75540	17.6346	33.5550	
GAETANUS SP. <=S4				5.59250	
GAIDIUS VARIABLIS S6F				5.59250	
GAIDIUS VARIABLIS S5				5.59250	
HETERORHABDUS SP. S6F			5.47820	5.59250	
HETERORHABDUS SP. S6M				5.59250	
HETERORHABDUS SP. S5				5.59250	
MICROCALANUS SP. S5			1481.31	2666.16	2672.91
MICROCALANUS SP. <=S4			740.654	358.256	
MICROCALANUS SP. S6F			2222.55	2507.68	1527.14
MICROCALANUS SP. S6M					1145.77
NATANTIA				33.5550	
ONCAEA SP.			4443.92	4297.28	3054.84
PLEUROMAMMA SP.			17.6346	22.3700	5.57554
POLYCHAETE LARVAE				7164.00	381.860
RACOVITZANUS ANTARCTICUS S6F				11.1850	
SAGITTA SCRIPPSAE		5.75540	5.47820	11.1850	
SCAPHOCALANUS SP. S6F				5.59250	

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 53	54	55	56	57
SIPHONOPHORE PLANULA	10.6569			358.256	
SPINOCALANUS BREVICAUDATUS S5				358.256	
TOMOPTERIS SEPTENTRIONALIS			47.0256	55.4250	5.57554
UNIDENTIFIED COPEPODITES			740.654		
UNIDENTIFIED MEDUSAE		5.75540	11.7564	363.848	11.1511
LIMACINA SP.	13400.9	6204.32	2237.83	716.400	

ZOOPLANKTON HAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 2 TO 14 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	2	4	6	8	10	12	14
AMPHIPODS*							
UNIDENTIFIED JUVENILES		234.245		17.6349			235.751
PARATHEMISTO SP.		7.19424	16.7598	5.87828	5.58524	27.9287	19.5661
EUPRIMNO SP.						5.58575	6.52870
CYPHOCARIS SP.							13.0574
CHAETOGNATHS*							
UNIDENTIFIED JUVENILES	176.029	615.540	800.559	549.620	195.483	320.957	1134.69
SAGITTA ELEGANS	99.8618	115.108	351.955	875.864	541.768	351.902	39.1722
EUKROHNIA HAMATA			11.1732			633.982	537.769
CTENOPHORES*							
PLEUROBRACHIA SP.	232.526	93.5252	117.318	11.7566	22.3409	22.3430	
EGGS LARVA*							
UNIDENTIFIED EGGS.	7343.24	3982.73	26558.7	4258.23	1810.17	2211.96	432.331
COPEPOD NAUPLII	1408.24	1874.10	2183.24	3702.73	164.541		
BARNACLE NAUPLII	352.003	2343.17	1637.43	1111.00	329.082		
EUPHAUSID LARVA	7929.71	9474.62	2569.27	4696.02	2468.12	1632.16	1297.25
DECAPOD LARVA	5.58624	43.1655		17.6349	16.7557	16.7572	6.52870
EUPHAUSIDS*							
JUVENILES	11.1765	21.5827	11.1732	123.444	770.762	83.7862	13.0574
EUPHAUSIA PACIFICA					5.58524	16.7572	6.52870
THYSANOESSA SPINIFERA				11.7566	33.5114	16.7572	
LARVACEANS*							
LARVACEANS	28159.1	20381.3	15826.8	11480.3	10528.2	9356.13	6593.99
MEDUSAE*							
PHIALIDIUM SP.	27.9412	35.9712	45.4749	5.87828	5.58524	61.4432	6.52870
AGLANTHA SP.			5.58654			5.58575	285.239
PROBOSCIDACTYLA SP.	16.7647		45.4749				6.52870
OSTRACODS*							
CONCHOECIA SP.						5.58575	216.165
COPEPODS*							
ACARTIA LONGIREMIS <=S3/4	1408.24	1874.10	1273.74	4443.40	2142.50	680.344	216.165
ACARTIA LONGIREMIS <=S4/5	10735.0	16870.5	11826.6	9626.03	10036.7	5274.62	108.050
ACARTIA LONGIREMIS S6M	4929.26	9654.32	6910.61	6665.97	11187.2	7317.33	648.431
ACARTIA LONGIREMIS S6F	10913.8	8201.44	27290.5	7776.97	16292.1	16204.0	2809.95

ZOOPLANKTON HAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 2 TO 14 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	2	4	6	8	10	12	14
CALANUS MARSHALLAE S3	1231.65	396.403	1227.37	1249.14	297.637	669.173	81.0212
CALANUS MARSHALLAE S4	1495.41	439.568	1636.97	1249.14	382.700	1924.29	
CALANUS MARSHALLAE S5	571.676	79.1367	1955.31	1063.97	1573.36	7278.23	81.0212
CALANUS MARSHALLAE S6M	439.850	63.8130	636.313		255.134	501.963	
CALANUS MARSHALLAE S6F	43.9794	56.6167	270.559	46.2621	425.294	1672.93	27.0286
CALANUS PACIFICUS <=S5			181.844	277.631	164.541		53.9924
CALANUS PACIFICUS S6F			181.844				
CALANUS SP. S1/2	2639.86	4655.61	909.497	1666.49	657.941	1531.61	216.165
CALANUS TENUICORNIS S5						83.6745	162.042
CALANUS TENUICORNIS S6M							108.050
CALANUS TENUICORNIS S6F							108.050
CENTROPAGES ABDOMINALIS <=S4	352.059	234.245	181.899	370.273	657.941	510.426	108.050
CENTROPAGES ABDOMINALIS S5	528.032	468.561	181.899	185.166	657.941	510.426	
CENTROPAGES ABDOMINALIS S6M	880.147	234.245	363.855	185.166	493.623		
CENTROPAGES ABDOMINALIS S6F	704.118		363.855	740.664	987.470	340.284	216.165
EUCALANUS BUNGI S1/2							549.590
EUCALANUS BUNGI S3	43.9794			5.87828	27.9262	11.1715	788.667
EUCALANUS BUNGI S4		7.19424	5.58659	17.6349	27.9262	11.1715	766.470
EUCALANUS BUNGI S5M						39.1002	193.837
EUCALANUS BUNGI S5F						55.8575	118.431
EUCALANUS BUNGI S6M						5.58575	13.0574
EUCALANUS BUNGI S6F		7.19424			5.58524	50.2717	52.2296
EUCHAETA JAPONICA S3							87.5499
EUCHAETA JAPONICA S4			5.58659			5.58575	66.2010
EUCHAETA JAPONICA S5M							13.0574
EUCHAETA JAPONICA S5F						5.58575	6.52870
METRIDIA SP. <=S3	352.003				822.705	1361.25	2161.65
METRIDIA SP. S4			181.899		493.623	2552.13	1188.88
METRIDIA PACIFICA S5M			181.899	185.166	164.541	340.284	648.431
METRIDIA PACIFICA S5F			363.855		493.623	340.284	324.215
METRIDIA PACIFICA S6M				185.166	164.541	170.142	
METRIDIA PACIFICA S6F		56.6167	181.899	185.166	164.206	340.284	108.050
NEOCALANUS PLUMCHRUS S4							6.52870
OITHONA HELGOLANDICA	1056.18	2343.17	2729.05	5554.39	3784.56	3743.01	19686.4

ZOOPLANKTON HAUL RESULTS - CRUISE A1-07 STANDARD LIST - STATIONS 2 TO 14 PAGE 3
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	2	4	6	8	10	12	14
OITHONA SPINIROSTRIS		234.245	909.497	925.830	822.705	2552.13	5728.28
PARACALANUS SP. <=S4	1056.16	937.410	545.754	740.664	987.500		324.215
PARACALANUS SP. S5	7566.47	18043.2	5821.23	7218.53	5429.97	2211.96	3026.05
PARACALANUS SP. S6M	4224.15	11014.4	3638.55	2962.07	5263.53	1361.25	324.215
PARACALANUS SP. S6F	10030.9	18978.4	8368.71	5184.06	7735.55	6635.87	3890.45
PSEUDOCALANUS SP. <=S3	2639.88	2343.17	2729.05	3517.57	4772.03	1531.61	108.050
PSEUDOCALANUS SP. S4	2991.94	2811.51	2546.93	1481.33	5265.20	2211.96	108.050
PSEUDOCALANUS SP. S5M	1408.24	468.561	2183.24	370.273	1974.38	1021.07	108.050
PSEUDOCALANUS SP. S5F	704.118	234.245	1455.31	558.378	987.470	1361.25	216.165
PSEUDOCALANUS SP. S6M	176.029	468.561	363.855		1151.68	680.344	
PSEUDOCALANUS SP. S6F	2463.85	468.561	1636.87	4443.40	5101.00	3233.03	756.677
SCOLECITHRICELLA MINOR <=S4						340.284	
SCOLECITHRICELLA MINOR S5					164.541	340.284	108.050
SCOLECITHRICELLA MINOR S6F				185.166	164.541	510.426	

ZOOPLANKTON HAUL RESULTS - CRUISE 81-07 VARIANTS LIST - STATIONS 2 TO 14 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D. :	2	4	6	8	10	12	14
AETIDEUS ARMATUS S6F							6.52870
BARNACLE CYPRIUS	352.003	234.245	1091.62	745.954	657.941	680.344	
BIVALVE LARVA	352.003		363.855	185.166		340.284	972.777
BRADYIDIUS SP. <=S4				185.166			
CALANUS MARSHALLAE/PACIFICUS S6M				277.631	170.070		
CALANUS MARSHALLAE/PACIFICUS S6F			270.559	138.786			27.0288
CALANUS MARSHALLAE/PACIFICUS <=S5			500.112	1897.51	935.415	936.745	107.985
CANDACIA COLUMBIAE S6F							6.52870
CLAUSOCALANUS SP. S6F							864.400
CLAUSOCALANUS SP. S5							972.777
CLAUSOCALANUS SP. <=S4							540.361
CORYCAEUS SP.	1760.29	1640.29	2183.24	740.664	329.082	340.284	864.400
CRYPTONISCID							108.050
CUMACEA				5.87828			
CYMBULIDAE					164.541		
ECHINOPLUTEUS LARVAE	176.029	234.245	181.849	558.378		1361.25	108.050
EPILABIDOCERA AMPHITRITE <=S4	176.029						
EPILABIDOCERA AMPHITRITE S6F		7.19424				5.58575	
EPILABIDOCERA AMPHITRITE S5					42.5036		
FISH LARVAE	176.029	7.19424		29.3914	5.58524	11.1715	
GAIDIUS VARIABLIS S6F							19.5861
GAIDIUS VARIABLIS S5							6.52870
GAIDIUS VARIABLIS <=S4							108.050
LUCICUTIA SP. <=S4							324.215
LUCICUTIA SP. S5							540.361
LUCICUTIA SP. S6M							216.165
LUCICUTIA SP. S6F					164.541		432.331
MICROCALANUS SP. S5							108.050
MICROCALANUS SP. S6F				185.166		170.142	
NATANTIA			5.58659				91.4018
NEMATOSCELIS SP.						5.58575	13.0574
ONCAEA SP.							216.165
PLEUROMAMMA SCUTULLATA S6F						5.58575	
PODON SP.	6662.35	468.561	545.754				324.215

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 2	4	6	8	10	12	14
POLYCHAETE LARVAE	528.032	1405.76	727.933		329.082	5.58575	324.215
RACOVITZANUS ANTARCTICUS SoF							13.0574
RACOVITZANUS ANTARCTICUS SS						175.728	61.4351
SAGITTA SCRIPPSAE						50.2717	91.4018
SALP		7.19424					665.514
SIPHONOPHORE PLANULA							6.52870
TESSARABRACHION OCULATUS							6.52870
TOMOPTERIS SEPTENTRIONALIS							13.0574
TORTANUS DISCAUDATUS SoM			181.899				
UNIDENTIFIED AMPHIPOD			5.58659				108.050
UNIDENTIFIED COPEPODITES							108.050
UNIDENTIFIED MEDUSAE	533.621	468.576	90.9497	5.87828		5.58575	13.0574
UNIDENTIFIED NAUPLIUS							1080.50
LIMACINA SP.	352.003			370.273		170.142	1297.25

ZOOPLANKTON PAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 15 TO 31 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	15	18	20	23	26	29	31
AMPHIPODS*							
UNIDENTIFIED JUVENILES	667.272	5.58775	90.9497				
PARATHEMISTO SP.		5.58775		11.1732	12.3901	184.655	4.06190
CYPHOCARIS SP.					6.19504		
CHAETOGNATHS*							
UNIDENTIFIED JUVENILES	376.704	716.349	174.749	941.341	384.093	491.643	724.236
SAGITTA ELEGANS	102.421	704.056	5.58659	525.140	700.040	997.135	150.290
EUKROHNIA HAMATA		22.3510		111.732	167.260	138.491	40.6190
CTENOPHORES*							
PLEUROBRACHIA SP.	194.358	27.9387				87.7109	12.1857
EGGS LARVA*							
UNIDENTIFIED EGGS.	667.272		2455.31	1407.82		1107.00	1230.75
COPEPOD NAUPLII	12006.6	6660.60	227.318	175.978			
BARNACLE NAUPLII	5336.13	2933.01	45.4749				
EUPHAUSID LARVA	14682.6	9253.31	545.597	2006.38	1025.28	5650.43	322.271
DECAPOD LARVA						4.61636	285.714
EUPHAUSIDS*							
JUVENILES	779.935	5.58775		150.838	669.065	106.176	16.2476
EUPHAUSIA PACIFICA				11.1732	972.622	4.61636	
THYSANOESSA SPINIFERA					55.7554	83.0946	
LARVACEANS*							
LARVACEANS	8054.5	29609.5	1227.37	703.911		2213.55	136.764
MEDUSAE*							
PHIALIDIUM SP.	359.139	33.5265			18.5851	9.23273	
AGLANTHA SP.	5.12104	27.9387			12.3901	18.4655	4.06190
PROBOSCIDACTYLA SP.	5.12104	5.58775			6.19504	18.4655	
OSTRACODS*							
CONCHOECIA SP.				175.978			
COPEPODS*							
ACARTIA CLAUSII S&F		370.132			438.671		
ACARTIA LONGIREMIS <=S3/4	3336.36	5551.99	45.4749	527.877	1315.83	22135.5	
ACARTIA LONGIREMIS <=S4/5	11343.1	9253.31	636.313	2815.08	7458.83	78589.0	957.389
ACARTIA LONGIREMIS S&M	10611.6	5181.52	4774.70	4926.82	26322.7	37632.6	7794.76
ACARTIA LONGIREMIS S&F	10677.4	8510.14	2455.31	9268.16	14477.8	55341.0	12655.9

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D. :	15	18	20	23	26	29	31
CALANUS MARSHALLAE S3	2869.83	615.770	126.480	773.184	1940.91	1036.84	352.897
CALANUS MARSHALLAE S4	4017.46	703.497	266.871	1182.12	3235.05	2212.16	386.489
CALANUS MARSHALLAE S5	574.069	2946.98	145.251	5726.26	13158.3	4562.81	739.265
CALANUS MARSHALLAE S6M		131.927	5.58659	90.9497	215.649	484.118	100.816
CALANUS MARSHALLAE S6F	51.9879	175.958	44.6927	136.425	1294.14	414.826	201.673
CALANUS PACIFICUS <=S5	327.952	483.787	55.6983			138.260	16.8162
CALANUS PACIFICUS S6M	163.976						
CALANUS SP. S1/2	6672.72	3330.56	816.436	1055.87	1315.83	4427.55	957.389
CALANUS TENUICORNIS S6F	51.9879					69.1531	
CENTROPAGES ABDOMINALIS <=S4	667.272	740.377	136.425	879.888		6642.95	
CENTROPAGES ABDOMINALIS S5	1334.54	370.132	227.318	527.877		11070.0	
CENTROPAGES ABDOMINALIS S6M	667.272	740.377	318.266	879.888		14389.2	136.764
CENTROPAGES ABDOMINALIS S6F	2001.82	370.132	318.268	879.888		1107.00	
EUCALANUS BUNGI S1/2						9.23273	
EUCALANUS BUNGI S3	5.12104			5.58659	6.19504	332.069	
EUCALANUS BUNGI S4	97.2998	11.1755		16.7598	43.3653	69.2455	
EUCALANUS BUNGI S5M	15.3631	5.58775		11.1732	18.5851	23.0818	
EUCALANUS BUNGI S5F	5.12104	16.7632		16.7598	43.3653	23.0818	8.12379
EUCALANUS BUNGI S6M					12.3901		
EUCALANUS BUNGI S6F				5.58659	30.9752	23.0818	
EUCHAETA JAPONICA S5M				5.58659	12.3901		
EUCHAETA JAPONICA S5F					12.3901		
EUCHAETA JAPONICA S6M					12.3901		
EUCHAETA JAPONICA S6F					6.19504		
METRIDIA SP. <=S3		370.132	136.425	175.978			547.137
METRIDIA SP. S4		370.132	45.4749	351.899	438.671	2213.55	136.764
METRIDIA PACIFICA S5M		740.377		175.978	1315.83	2213.55	136.764
METRIDIA PACIFICA S5F				351.899		1107.00	136.764
METRIDIA PACIFICA S6M		1110.29	45.4749	527.877	438.671		
METRIDIA PACIFICA S6F				175.978			
NEOCALANUS CRISTATUS S4		5.58775					
NEOCALANUS CRISTATUS S5	5.12104			5.58659		13.8491	
NEOCALANUS PLUMCHRUS S5		5.58775		5.58659	49.5604		4.06190
OITHONA HELGOLANDICA	10011.0	1480.75	227.318	1407.82	6141.77	17708.4	410.251

STATION I.D.	: 15	16	25	23	26	29	31
OITHONA SPINIROSTRIS			500.112	703.911		1107.00	820.503
PARACALANUS SP. <=S4	1334.54	740.377	90.9497		877.218	2213.55	
PARACALANUS SP. S5	16684.4	7403.77	500.112	1935.75	7458.83	34313.4	136.764
PARACALANUS SP. S6M	6672.72	7403.77	363.743	1055.87	3509.49	7746.26	
PARACALANUS SP. S6F	23357.1	11846.0	1273.16	2463.13	7018.98	37632.6	273.528
PSEUDOCALANUS SP. <=S3	26693.2	12952.4	318.268	3670.95	6141.77	4897.96	1504.53
PSEUDOCALANUS SP. S4	29027.5	15176.3	363.743	2639.11	19743.6	14149.2	7384.53
PSEUDOCALANUS SP. S5M	2669.09	1850.66	272.793	527.877	6141.77	4353.23	547.137
PSEUDOCALANUS SP. S5F	1334.54	1850.66	45.4749	879.808	6141.77	1088.54	1094.27
PSEUDOCALANUS SP. S6M	667.272		363.743	4222.91	4825.32	1088.54	820.503
PSEUDOCALANUS SP. S6F	2669.09	4071.23	863.687	7391.06	22810.2	9251.19	2871.76
SCOLECITHRICELLA MINOR S5				175.978			
SCOLECITHRICELLA MINOR S6F				175.978			136.764

ZOOPLANKTON HAUL RESULTS - CRUISE 81-07 VARIANTS LIST - STATIONS 15 TO 31 PAGE 1

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 15	18	20	23	26	29	31
BARNACLE CYPRIDS	2669.09	1480.75	90.9497				136.764
BIVALVE LARVA	2001.82	740.377			877.218		
CALANUS MARSHALLAE/PACIFICUS S6M	919.879	43.9756	50.2793				16.8162
CALANUS MARSHALLAE/PACIFICUS S6F	2049.95	439.812	27.9330			138.260	16.8162
CALANUS MARSHALLAE/PACIFICUS <=S5	4099.39	3034.71	692.737	409.218	215.649	1175.33	655.590
CLAUSOCALANUS SP. S6F							136.764
CORYCAEUS SP.	4670.90	1650.66	318.268			1107.00	957.369
CYPHANAUTES LARVA	667.272						
ECHINOPLUTEUS LARVAE	6006.98	1650.66	136.425	879.888		1107.00	
EPILABIDOCERA AMPHITRITE <=S4			45.4749				1504.53
EPILABIDOCERA AMPHITRITE S6F				5.58659			4.06190
EPILABIDOCERA AMPHITRITE S6M		5.58775			6.19504	4.61636	
FISH EGGS	667.272						
FISH LARVAE		11.1755	5.58659			1107.00	
LUCICUTIA SP. S6M		39.1142			18.5851		
MYSID				5.58659	18.5851	4.61636	
NATANTIA						9.23273	
NEMATOSCELIS SP.	667.272		90.9497				
PERACLIS SP.			90.9497				
PODON SP.	672.393	751.552				1107.00	4.06190
POLYCHAETE LARVAE		5.58775		5.58659	12.3901		
SAGITTA SCHIPPSAE	20.4442					27.6982	
SALP					439.671		
TORTANUS DISCAUDATUS <=S4					12.3901	4.61636	
UNIDENTIFIED AMPHIPOD							
UNIDENTIFIED COPEPODITES	667.272	1110.29	45.4749	175.978		3320.55	136.764
LIMACINA SP.							

ZOOPLANKTON HAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 33 TO 41 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/100. METER)

STATION I.D.	33	34	35	36	38	40	41
AMPHIPODS*							
UNIDENTIFIED JUVENILES							
PARATHEMISTO SP.						2071.09	
CYPHOCARIS SP.	25.4460	8.12791			161.456	664.797	22.3529
CHAETOGNATHS*					11.1349		5.58824
UNIDENTIFIED JUVENILES	1125.99	517.748	206.704	312.768	2391.78	1542.18	72.6471
SAGITTA ELEGANS	1094.18	654.297	361.955	37.7698	295.075	105.782	324.118
EUKROHNIA HAMATA	80.5701	109.727	16.7598	75.5396	311.777	1013.28	217.997
CTENOPHORES*							
PLEUROBRACHIA SP.		16.2558	22.3464		16.7024		
EGGS LARVA*							
UNIDENTIFIED EGGS.	271.079	5661.09	692.179	6431.65	2211.95	517.773	7516.16
COPEPOD NAUPLII			346.145	83.5252			
BARNACLE NAUPLII					92.1413	172.424	
EUPHAUSID LARVA	543.273	1913.72	8307.26	935.252	1935.25	3017.56	1432.26
EUPHAUSIDS*							
JUVENILES	1539.91	427.652	16.7598	43.1655		283.940	89.4118
EUPHAUSIA PACIFICA	72.0971	52.8314	11.1732		77.9443	86.1842	
THYSANOESSA SPINIFERA	25.4460	52.8314	11.1732	26.9784			16.7647
MEDUSAE*							
PHIALIDIUM SP.		8.12791	86.4804				11.1765
AGLANTHA SP.	4.24101		16.7598		371.176	180.831	22.3529
PROBOSCIDACTYLA SP.	4.24101	4.06396					16.7647
COPEPODS*							
ACARTIA LONGIREMIS C=S3/4	543.273	3962.76	5537.99	83.5252	92.1413	172.424	2864.19
ACARTIA LONGIREMIS C=S4/5	4619.00	11887.1	12117.3	918.885	829.550	258.608	15753.2
ACARTIA LONGIREMIS S6M	20106.6	24343.1	13150.8	2924.46	921.413	258.608	17193.8
ACARTIA LONGIREMIS S6F	22006.6	37364.0	28731.6	5097.00	1290.54	601.285	26851.5
CALANUS MARSHALLAE S3	1335.92	1664.47	1011.17	647.482			715.853
CALANUS MARSHALLAE S4	1335.92	3695.30	747.486	1209.17	22.2698		805.265
CALANUS MARSHALLAE S5	7612.61	5425.38	1363.13	885.432	22.2698	43.8158	3399.88
CALANUS MARSHALLAE S6M		130.105	395.754	215.861			89.4076
CALANUS MARSHALLAE S6F	267.141	934.737	219.898	367.014	22.2698		1251.76
CALANUS PACIFICUS C=S5					245.024		89.4076

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	33	34	35	36	38	40	41
CALANUS SP. S1/2	1630.24	566.109	1038.55	1002.52	460.818	172.424	3222.18
CALANUS TENUICORNIS <=S4					92.1413	601.285	
CALANUS TENUICORNIS S5					22.2698	86.1842	
CALANUS TENUICORNIS S6M					22.2698	172.424	
CALANUS TENUICORNIS S6F					22.2698	172.424	
CENTROPAGES ABDOMINALIS <=S4		566.109	1730.73	83.5252	92.1413		2503.53
CENTROPAGES ABDOMINALIS S5		2264.44	692.179	167.104			357.982
CENTROPAGES ABDOMINALIS S6M		2830.95	1384.36	250.629		86.1842	2505.76
CENTROPAGES ABDOMINALIS S6F			346.145	501.313	92.1413		1789.91
EUCALANUS BUNGI S1/2		69.5749			89.0792	306.767	89.4676
EUCALANUS BUNGI S3		69.5749	11.1732	10.7914	334.158	175.319	16.7647
EUCALANUS BUNGI S4	4.24101	417.368	16.7598		556.745	636.360	50.2941
EUCALANUS BUNGI S5M	16.9640	159.429	5.58659	16.1871	200.428	138.463	44.7059
EUCALANUS BUNGI S5F	12.7230	24.3937		10.7914	217.131	132.895	39.1176
EUCALANUS BUNGI S6M			5.58659	5.39568	5.56745	11.1349	
EUCALANUS BUNGI S6F	8.48201	8.12791		16.1871	72.3769	89.0792	44.7059
EUCHAETA JAPONICA S1/2							357.982
EUCHAETA JAPONICA S3					368.677		
EUCHAETA JAPONICA S4	4.24101				108.844	16.7024	
EUCHAETA JAPONICA S5M	4.24101	4.06396			22.2698	44.5396	
EUCHAETA JAPONICA S5F	4.24101	12.1919			11.1349	27.8373	
EUCHAETA JAPONICA S6M						11.1349	
METRIDIA SP. <=S3	343.358		1384.36	501.313	1474.82	1380.73	1432.26
METRIDIA SP. S4		566.109	4154.19	1002.52	1474.82	2499.79	
METRIDIA PACIFICA S5M	1358.39	1698.33	346.145	584.892	829.550	344.848	357.982
METRIDIA PACIFICA S5F	815.121	566.109	692.179	83.5252	276.480	172.424	357.982
METRIDIA PACIFICA S6M	815.121			83.5252	368.677	258.608	357.982
METRIDIA PACIFICA S6F	271.679	1698.33	346.145		1659.10	1120.73	
NEOCALANUS CRISTATUS S4	4.24101						
NEOCALANUS CRISTATUS S5	16.9640			5.39568			5.58824
NEOCALANUS PLUMCHRUS S5	67.8985	8.12791				5.56745	
OITHONA HELGOLANDICA	3260.06	2036.07	2769.27	4010.01	15666.8	5600.86	28282.1
OITHONA SPINIROSTRIS	271.679	1698.33	2422.90	4595.50	3962.91	4309.21	3222.18
PARACALANUS SP. <=S4			346.145				1432.26

ZOOPLANKTON HAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 33 TO 41 PAGE 3
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 33	34	35	36	38	40	41
PARACALANUS SP. S5	1066.97	7924.72	1730.73	1253.42	2394.00	344.848	1286.5
PARACALANUS SP. S6M	271.679	1132.22	2422.90	752.158	368.677	690.304	7516.18
PARACALANUS SP. S6F	1066.97	7359.63	8653.63	4762.23	1748.16	1725.91	10025.3
PSEUDOCALANUS SP. <=S3	667.456	18682.0	18692.7	1671.04	183.726	86.1842	13959.4
PSEUDOCALANUS SP. S4	5475.14	57744.8	11424.6	1754.68	183.726	258.608	22196.5
PSEUDOCALANUS SP. S5M	4007.33	5661.69	2769.27		367.452	172.424	10740.6
PSEUDOCALANUS SP. S5F	3072.18	3962.76	3115.38	167.104			4653.88
PSEUDOCALANUS SP. S6M	1469.51	2830.55	2422.90	1671.04	94.6467		2505.76
PSEUDOCALANUS SP. S6F	4542.12	9623.45	7268.16	3843.35	278.373	517.216	10025.3
SCOLECITHRICELLA MINOR <=S4				83.5252	629.550	86.1842	357.982
SCOLECITHRICELLA MINOR S5			346.145	167.104	1107.92	431.032	357.982
SCOLECITHRICELLA MINOR S6M				83.5252	462.098	172.424	
SCOLECITHRICELLA MINOR S6F				83.5252	734.904	172.424	

ZOOPLANKTON HAUL RESULTS - CRUISE 81-07 VARIANTS LIST - STATIONS 33 TO 41 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 33	34	35	36	38	40	41
AEGINA SP.				5.39568	114.411	5.56745	
AETIDEUS ARMATUS S6F					94.6467		
AETIDEUS ARMATUS <=S4				107.104			
BARNACLE CYPRIDS	543.273	566.109	346.257	334.209	184.338		
BIVALVE LARVA		566.109	346.145		184.338	172.424	357.982
CALANUS MARSHALLAE/PACIFICUS S6M		139.109			22.2698		
CALANUS MARSHALLAE/PACIFICUS S6F		139.109					
CALANUS MARSHALLAE/PACIFICUS <=S5	133.592	208.684	703.352	21.5827	92.1413	43.8158	89.4676
CANDACIA COLUMBIAE S5					92.1413		
CANDACIA COLUMBIAE <=S4					92.1413		
CANDACIA SP. <=S4						172.424	
CLAUSOCALANUS SP. S6F			346.145		1380.73	1896.61	357.982
CLAUSOCALANUS SP. S6M					94.6467	172.591	
CLAUSOCALANUS SP. S5			1384.36		2394.00	2758.67	
CLAUSOCALANUS SP. <=S4					94.6467	517.200	
CORYCAEUS SP.				83.5252	1197.00	861.842	357.982
CYMBULIDAE		566.109					357.982
ECHINOPLUTEUS LARVAE		1698.33	346.145	334.209			2145.68
EPILABIDOCERA AMPHITRITE <=S4					92.1413	172.368	
EUCHIRELLA SP. S6F					16.7024		
EUCHIRELLA SP. S5					16.7024	16.7024	
EUCHIRELLA SP. <=S4						91.7516	
EVADNE SP.					94.6467		
FISH LARVAE					92.1413	172.424	
GAETANUS SP. S6F					27.8373		
GAETANUS SP. S5					5.56745	5.56745	
GAIDIUS COLUMBIAE S6F					44.5396		
GAIDIUS COLUMBIAE S5					11.1349		
GAIDIUS COLUMBIAE <=S4					5.56745		
GAIDIUS VARIABLIS S6F						60.5182	5.58824
GAIDIUS VARIABLIS S5						43.8158	5.58824
HETERORHABDUS SP. S6F						5.60000	
LUCICUTIA SP. <=S4				83.5252	924.197	344.848	
LUCICUTIA SP. S5				250.629	829.550	431.038	

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 33	34	35	36	38	40	41
LUCICUTIA SP. S6M				83.5252	551.178	86.1842	
LUCICUTIA SP. S6F				167.104	551.178	258.606	
MYSID	16.9643	4.06396					
NATANTIA	4.48201				16.7024	16.7024	
NEMATOSCELIS SP.		69.6000			33.4047	11.1349	
ONCAEA SP.					92.1413	86.1842	
PLEUROMAMMA SP.					103.280		
PODON SP.		566.109		167.104	94.6467		
POLYCHAETE LARVAE				83.5252			
RACOVITZANUS ANTARCTICUS S6F					94.6467		
RACOVITZANUS ANTARCTICUS S5					183.726	86.1842	
SAGITTA SCRIPPSAE	8.48201	12.1919	11.1732	16.1871	77.9443	72.3769	
SALP					1102.36	923.084	
SCAPHOCALANUS SP. S5					92.1413		
SIPHONOPHORE PLANULA					5.56745		
SIPHONOPHORE PNEUMATOPHORE							5.58824
SPINOCALANUS BREVICAUDATUS <=S4						86.1842	
TESSARABRACHION OCULATUS	4.24101						
TOMOPTERIS SEPTENTRIONALIS		4.06396			33.4047	27.8373	5.58824
TORTANUS DISCAUDATUS S6M				83.5252			
UNIDENTIFIED AMPHIPOD			5.56659	10.7914			
UNIDENTIFIED COPEPODITES						517.272	
UNIDENTIFIED MEDUSAE					5.56745		
LIMACINA SP.		566.109	692.179				

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	43	45
AMPHIPODS*		
UNIDENTIFIED JUVENILES		756.097
PARATHEMISTO SP.	27.9330	40.7106
CYPHOCARIS SP.	11.1732	
CHAETOGNATHS*		
UNIDENTIFIED JUVENILES	636.672	2614.14
SAGITTA ELEGANS	731.844	1152.62
EUKROHNIA HAMATA	698.324	344.763
CTENOPHORES*		
PLEUROBRACHIA SP.	16.7598	5.41229
EGGS LARVA*		
UNIDENTIFIED EGGS.	1407.82	
COPEPOD NAUPLII	703.911	
EUPHAUSID LARVA	293.55	
EUPHAUSIDS*		
JUVENILES	167.598	
EUPHAUSIA PACIFICA		81.1843
THYSANOESSA SPINIFERA	5.58659	
LARVACEANS*		
LARVACEANS	5.58659	364.247
MEDUSAE*		
PHIALIDIUM SP.	11.1732	27.0614
AGLANTHA SP.	50.2795	32.4737
OSTRACODS*		
CONCHOECIA SP.	11.1732	
COPEPODS*		
ACARTIA LONGIREMIS <=S3/4	703.911	
ACARTIA LONGIREMIS <=S4/5	13378.2	
ACARTIA LONGIREMIS S6M	26754.2	3279.85
ACARTIA LONGIREMIS S6F	55251.1	12940.8
CALANUS MARSHALLAE S3	1681.56	
CALANUS MARSHALLAE S4	1452.51	64.9475
CALANUS MARSHALLAE S5	2592.13	519.580
CALANUS MARSHALLAE S6M	272.026	86.5966

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.		: 43	45
CALANUS MARSHALLAE S6F		500.000	324.737
CALANUS SP. S1/2		2145.25	364.247
CENTROPAGES ABDOMINALIS	S5	703.911	
CENTROPAGES ABDOMINALIS	S6M	2815.64	
CENTROPAGES ABDOMINALIS	S6F	1407.82	
EUCALANUS BUNGI S3		102.275	
EUCALANUS BUNGI S4		67.0391	10.8246
EUCALANUS BUNGI S5M		55.8659	10.8246
EUCALANUS BUNGI S5F		61.4525	10.8246
EUCALANUS BUNGI S6M		11.1732	
EUCALANUS BUNGI S6F		39.1061	10.8246
EUCHAETA JAPONICA S1/2		91.0615	
EUCHAETA JAPONICA S4		45.2514	5.41229
EUCHAETA JAPONICA S5M		33.5196	10.8246
EUCHAETA JAPONICA S5F		27.9330	
EUCHAETA JAPONICA S6M		16.7598	
METRIDIA SP. <=S3			1093.28
METRIDIA SP. S4		2815.64	1455.91
METRIDIA PACIFICA S5M		2815.64	730.659
METRIDIA PACIFICA S5F		1407.82	364.247
METRIDIA PACIFICA S6M		703.911	546.641
METRIDIA PACIFICA S6F		703.911	1093.28
NEOCALANUS CRISTATUS S4		11.1732	
NEOCALANUS CRISTATUS S5		11.1732	
NEOCALANUS PLUMCHRUS S5			21.6492
OITHONA HELGOLANDICA		5631.28	1510.03
OITHONA SPINIROSTRIS		5631.28	1510.03
PARACALANUS SP. S5		7156.42	
PARACALANUS SP. S6M		5726.26	
PARACALANUS SP. S6F		10379.9	3772.37
PSEUDOCALANUS SP. <=S3		3519.55	7539.32
PSEUDOCALANUS SP. S4		12670.4	59562.2
PSEUDOCALANUS SP. S5M		9854.75	32419.6
PSEUDOCALANUS SP. S5F		8446.93	11311.7

(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.		: 43	45
PSEUDOCALANUS SP.	S6M	12670.4	752.30R
PSEUDOCALANUS SP.	S6F	35201.1	18093.3
SCOLECITHRICELLA MINOR	S6M		752.30R
SCOLECITHRICELLA MINOR	S6F		1510.03

ZOOPLANKTON HAUL RESULTS - CRUISE RI-07 VARIANTS LIST - STATIONS 43 TO 45 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/SQ. METER)

STATION I.D.	: 43	45
AETIDEUS ARMATUS S6F	5.58659	5.41229
CALANUS MARSHALLAE/PACIFICUS <=S5		129.895
ECHINOPLUTEUS LARVAE	703.911	
EPILABIDOCERA AMPHITRITE <=S4		162.400
EPILABIDOCERA AMPHITRITE S6F		10.8246
EPILABIDOCERA AMPHITRITE S6M		5.41229
EPILABIDOCERA AMPHITRITE S5		5.41229
EUCHIRELLA SP. S5	5.58659	5.41229
FISH LARVAE	5.58659	5.41229
GAETANUS SP. <=S4		10.8246
GAIDIUS VARIABLIS S6F		5.41229
GAIDIUS VARIABLIS S5		27.0614
NATANTIA	5.58659	70.3598
NEMATOSCELLIS SP.	16.7598	5.41229
PLEUROMAMMA SCUTULLATA S5	5.58659	
RACOVITZANUS ANTARCTICUS S6F	5.58659	27.0614
SAGITTA SCRIPPSAE	67.0391	27.0614
SALP	5.58659	
SCAPHOCALANUS BREVICORNIS <=S4		182.394
TESSARABRACHION OCULATUS	5.58659	
THYSANOESSA RASCHII		281.439
TOMOPTERIS SEPTENTRIONALIS		5.41229
TORTANUS DISCAUDATUS S6F		364.247
TORTANUS DISCAUDATUS <=S4		546.641
UNIDENTIFIED AMPHIPOD		21.6492
UNIDENTIFIED MEDUSAE	16.7598	

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 3 TO 18 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	3	5	7	13	16	17	18
CENTRIC DIATOMS:							
BACTERIASTRUM DELICATULA	.81000		2.54240				.05000
CHAETOCEROS COMPRESSUS	.94000	6.58300	4.54000	.01800			
CHAETOCEROS DEBILIS	.09060		1.13500	.01000			
CHAETOCEROS DIDYMUS	.18000	.45400	.45400	.00400			
CHAETOCEROS ? RADICANS	3.37000		23.0178				
CHAETOCEROS SOCIALIS	.20000		1.96140				
COSCINODISCUS SPP.	.03000		.09080	.00400			
LEPTOCYLINDRUS DANICUS			.18160	.01400			.04000
RHIZOSOLENIA DELICATULA	.04000		.36320				
RHIZOSOLENIA FRAGILISSIMA		2.27000	.31780	.00400			
SCHROEDERELLA DELICATULA		4.35840					
SKELETONEMA COSTATUM	6.16000		11.2592	.38400			.06000
THALASSIOSIRA AESTIVALIS	.04300	.13620	.09080				
THALASSIOSIRA DECIPIENS	.08000						.03000
THALASSIOSIRA GRAVIDA/ROTULA	.09000	.09080	.72640				.04000
THALLASIOSIRA NORDENSKIOLDII	.22000	.36320	1.08960	.00600			.04000
THALASSIOSIRA SPP.	.16000	.54480	.49940	.00800	.02000	.02000	31.8.780
TOTAL CENTRIC DIATOMS	105.160	29.5102	111.411	1.60200	197.170	88.2900	
PENNATE DIATOMS:							
ASTERIONELLA JAPONICA	1.39000	2.49700	5.72040	.05200	.04000	.10000	.07000
CYLINDROTHECA CLOSTERIUM		.13620			.02000	.03000	
NITZSCHIA? DELICATISSIMA	.13000	.45400	.45400	.01400	.16000	.04000	.06000
NITZSCHIA? LONGISSIMA	.12000	.09080	.09080	.02800			
NITZSCHIA? PUNGENS	.16000						.04000
NITZSCHIA? SERIATA	.04000						
THALASSIONEMA NITZSCHOIDES	.49000	.18160	.49940	.01400	.12000	.18000	.10000
TOTAL PENNATE DIATOMS	4.78000	5.94700	9.53400	.18600	1.48000	83.0500	6.90000
DINOFLAGELLATES:							
DINOPHYSIS	.01000			.00200			
GYMNODINIUM	.67000	1.36300	.72640	.10600	.72000	.68000	.22000
GYRODINIUM	2.60000	.09000	.49940	.10200	.82000	.20000	.15000

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 3 TO 18 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	3	5	7	13	16	17	18
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM						.03000	.04000
CRYPTOMONADS (5-10U)	115.140	42.0000	35.4120	.04600	91.7700	58.1400	31.6400
CRYPTOMONADS (11-20U)	9.93000	13.9000	.81720	.02600	2.64000	6.25000	7.40000
EUTREPTIELLA SPP.	.04000		.09080				
TOTAL FLAGELLATE CELLS	129.790	62.7596	37.7728	.31600	97.9300	66.5800	40.2900
TOTAL PHYTOPLANKTON CELLS	380.450	117.587	252.767	2.86400	522.510	525.010	765.310

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 5 TO 18 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	3	5	7	13	16	17	18
CYCLOTELLA CASPIA		.13620					
ASTEROMPHALUS SARCOPHAGUS	.04000	.09080	.27240				
CHAETOCEROS CONSTRICTUM	.67000						
CHAETOCEROS DIADEMA	.66000						
CHAETOCEROS SIMPLEX C. CALCITRANS	3.78000	1.82000	2.36080	.00800	.71000	.36000	3.36000
CHAETOCEROS SUBTILE					.06000	.10000	.06000
LAUDERIA BOREALIS	.40000	.49940	.40860				
LEPTOCYLINDRICUS MINIMUS	1.26000	6.13000	6.62840	.00800	.08000	.06000	.07000
RHIZOSOLENIA ALATA F. GRACILLIMA	.15000	.04540	.36320				
RHIZOSOLENIA FRAGILISSIMA v. ?	.59000		2.99640		.02000	.02000	.05000
THALASSIOSIRA BINATA		.22700					
THALASSIOSIRA CF. CONDENSATA			.09080				
THALASSIOSIRA CONFERTA	.32000	2.18000	.45400	.12000	.16000	.80000	.23000
THALASSIOSIRA PACIFICA	.48000	.68100	2.96020	.00400	.04000	.06000	.09000
THALASSIOSIRA PROFUNDA	74.6700		41.9495		132.810	80.3700	109.440
THALASSIOSIRA PSEUDONANA	9.70000	2.90000	4.85760	1.01000	63.2700	6.50000	205.200
NAVICULA SPP.		.18160		.01800			
CYLINDROTHECA FUSIFORMIS	.08000	.18160	.18160			.04000	.04000
FRAGILLARIA OCEANICA	.11000	1.18000	1.54360		.20000	.49000	.45000
NITZSCHIA (BACILLARIA) SP.	.36000	.22700	.31780		.54000	.34000	.44000
NITZSCHIA GRANII	.12000	.13620	.18160	.04000	.02000	.02000	.03000
NITZSCHIA BICAPITATA	1.84000	.68100	.54480	.02000	.38000	1.40000	5.65000
KATODINIUM ROTUNDATUM		4.77000		.01800	1.90000	.56000	.12000
PROROCENTRUM BALTICUM	.32000	.27640	.22700		.08000	.72000	.72000
SCRIPPSIELLA & GLENODINIUM SPP.	.05000	.36320		.01600			
PHOTOSYNTHETIC CILIATES		.22700				.02000	.04000
APEDINELLA SPINIFERA		1.54000					
OCHROMONAS SPP.	10.2600	.81720	7.62720	.14400	43.3200	26.3200	90.0600
OLISTHODISCUS LUTEUS		.09080					
OLISTHODISCUS SP.		1.63000					
CHRYSOCHROMULINA SPP. & IMANTONIA	129.960	8.62000	86.4416	.61600	182.400	259.920	308.940
PYRAMIMONAS SPP.	.50000	6.40000			.21000	.85000	.34000
PTEROSPERMA SPP.		.27240					

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 19 TO 25 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	19	20	21	22	23	24	25
CENTRIC DIATOMS:							
BACTERIASTRUM DELICATULA							
CHAETOCEROS COMPRESSUS						.04600	.01200
CHAETOCEROS DEBILIS			.02400		.02800	.03000	.01800
CHAETOCEROS ? RADICANS					.05200		.02000
CHAETOCEROS SOCIALIS			.02400		.06000	.06000	.03200
COSCINODISCUS SPP.			.01800		.03600	.04000	.01400
CORETHRON HYSTRIX		.02000	.00200		.00600	.02000	
LEPTOCYLINDRUS DANICUS	.04000	.02000	.01000		.02400		.00400
RHIZOSOLENIA DELICATULA					.01800	.02000	.00800
RHIZOSOLENIA FRAGILISSIMA					.00600		.01000
SKELETONEMA COSTATUM	.11000	.07000	.21400	.04000	.04000	.11000	.03600
THALASSIOSIRA AESTIVALIS		.01000	.00400		.01000		
THALASSIOSIRA DECIPIENS							.00400
THALASSIOSIRA GRAVIDA/ROTULA	.01000	.02000	.01000	.01000	.03600	.02000	.00600
THALLASIOSIRA NORDENSKIOLDII	.02000	.06000	.05200	.03000	.02000	.04000	.01000
THALASSIOSIRA SPP.		.03000	.00800		.02400	.03000	.00400
TOTAL CENTRIC DIATOMS	122.520	184.120	1.60800	646.590	3.53000	31.7000	68.2060
PENNATE DIATOMS:							
ASTERIONELLA JAPONICA	.03000	.04000	.07600		.02000	.05000	.03000
CYLINDROTHECA CLOSTERIUM			.00800			.03000	
NITZSCHIA? DELICATISSIMA	.06000	.15000	.01600	.02000	.29200	.06000	.02400
NITZSCHIA? LONGISSIMA			.00800	.04000	.02600	.02000	.01400
NITZSCHIA? PUNGENS					.01000	.03000	.01200
NITZSCHIA? SERIATA			.00600		.01600	.05000	.00800
THALASSIONEMA NITZSCHOIDES	.06000	.34000	.20400	.82000	.04200	.04000	.01000
TOTAL PENNATE DIATOMS	1.14000	6.67000	.86600	13.1400	2.39800	2.35000	1.12400
DINOFLAGELLATES:							
GYMNODINIUM	.14000	.03000	.77000	.81000	.04600	.86000	.19800
GYRODINIUM	.76000	.42000	.24800	.76000	.48400	.92000	2.12000
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM							.00600
CRYPTOMONADS (5-10U)	71.8200	40.4800	3.75200	106.300	3.97600	16.5200	24.1600
CRYPTOMONADS (11-20U)	2.70000	5.25000	1.25000	4.50000	1.35000	1.04000	7.16800

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 19 TO 25 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	19	20	21	22	23	24	25
TOTAL FLAGELLATE CELLS	77.0260	47.9300	6.17000	117.460	5.94600	19.5200	34.2160
TOTAL PHYTOPLANKTON CELLS	345.410	319.390	30.6120	1136.61	109.920	343.240	161.376

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 19 TO 25 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	19	20	21	22	23	24	25
ACTINOPTYCHUS UNDULATUS			.00600				
ASTEROMPHALUS SARCOPHAGUS		.02000					
CHAETOCEROS CONSTRICTUM			.02600		.04000	.03000	.01000
CHAETOCEROS DIADEMA			.01200		.02400		.00600
CHAETOCEROS LACINIOSUM							.00400
CHAETOCEROS LORENZIANUM					.01400		
CHAETOCEROS SIMPLEX C. CALCITRANS	1.32000	2.64000	.09200	16.1000	.05000	.18000	.02400
CHAETOCEROS SUBTILE			.01400		.02000	.05000	.01200
LAUDERIA BOREALIS	.02000	.03000	.00800		.03000	.04000	.01200
LEPTOCYLINDRICUS MINIMUS	.42000	.16000	.01400		.04800	.07000	.02400
RHIZOSOLENIA ALATA F. GRACILLIMA					.02600	.06000	.00600
RHIZOSOLENIA FRAGILISSIMA V. ?	.06200	.11000	.01600		.02000	.05000	.02000
THALASSIOSIRA CONFERTA	.06000	.24000	.07800	.08000	.03800	.26000	.04800
THALASSIOSIRA LEPTOPUS			.00800				
THALASSIOSIRA PACIFICA	.03000	.06000	.14800	.03000	.05600	.07000	.02000
THALASSIOSIRA PROFUNDA	9e.3300	79.8000	.07200	607.620	2.68800	29.9600	65.4360
THALASSIOSIRA PSEUDONANA	24.0560	100.890	.74400	22.6800	.11600	.52000	2.40900
ASTERIONELLA KARIANA			.00900				
CYLINDROTHECA FUSIFORMIS	.05200		.01000		.01400	.02000	.00600
FRAGILLARIA OCEANICA	.15000	5.00000	.29600	2.50000	.41600	1.84000	.96000
NITZSCHIA (BACILLARIA) SP.	.29000	.56000	.01400	.20000	.05000	.12000	.02000
NITZSCHIA GRANII	.01000		.02000	.01000	.01200	.01000	.02400
NITZSCHIA BICAPITATA	.45000	2.56000	.20700	9.55000	1.50000	.08000	.01600
KATODINIUM ROTUNDATUM	1.24000	.50000	.12000	2.73000		.11000	.53600
PROROCENTRUM BALTICUM	.34000	.22000	.02000	.32000	.06000	.07000	.01400
SCRIPPSIELLA & GLENODINIUM SPP.		.03000	.01000	.04000	.03000		.00600
PHOTOSYNTHETIC CILIATES	.02000		.00600	.06000	.03200	.02000	.00800
APEDINELLA SPINIFERA					.01600		
MERINGOSPHAERA MEDITERRANEA				.07000			
OCHROMONAS SPP.	12.8800	9.80000	2.07200	13.1600	1.26800	24.6400	9.01600
OLISTHODISCUS SP.	.50000	.35000	.01600		.03000	.46000	
CHRYSOCHROMULINA SPP. & IMANTONIA	151.100	66.4000	19.6360	345.420	96.6720	264.480	46.7920
PYRAMIMONAS SPP.	.25200	.12000	.04400	.77000	.04000	.09000	.02000

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 26 TO 33 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D. :	26	27	28	29	31	32	33
CENTRIC DIATOMS:							
BACTERIASTRUM DELICATULA	4.99440		.31780				
CERATULINA BERGONII			.16160				
CHAETOCEROS COMPRESSUS	7.67260		7.94500				
CHAETOCEROS DEBILIS	2.95100		1.72520				
CHAETOCEROS DIDYMUS	.50260		.27240				
CHAETOCEROS ? RADICANS	127.483		36.0022				
CHAETOCEROS SOCIALIS	9.08000		1.77060				
COSCINODISCUS SPP.			.13620				
CORETHRON HYSTRIX	.09060			.00800			
LEPTOCYLINDRUS DANICUS	.45400		.22700				
RHIZOSOLENIA DELICATULA	.09080						
RHIZOSOLENIA FRAGILISSIMA	.45400		.09080				
SKELETONEMA COSTATUM	33.3690	.02000	19.4312	.02000	.20000	.28000	
THALASSIOSIRA AESTIVALIS	.77180		.27240				
THALASSIOSIRA DECIPIENS	.22700						
THALASSIOSIRA GRAVIDA/ROTULA	1.86140	.02000	1.54360	.00400		.01000	
THALLASIOSIRA NORDENSKIOLDII	6.17440	.06000	3.49560	.00400	.01000	.02000	
THALASSIOSIRA SPP.	.45400	.02000	.54020	.00800	.01000	.01000	
TOTAL CENTRIC DIATOMS	276.259	98.5900	123.579	1.22600	134.130	90.0700	243.080
PENNATE DIATOMS:							
ASTERIONELLA JAPONICA	22.3368		14.7096	.00600			
NITZSCHIA? DELICATISSIMA	.90800		.77180	.01000	.12000	.09000	.02000
NITZSCHIA? LONGISSIMA	.68100		.31760	.00400	.02000	.03000	
NITZSCHIA? PUNGENS	.68100	.02000	.54460	.00600			
NITZSCHIA? SERIATA	.09080	.03000	.09080				
THALASSIONEMA NITZSCHOIDES	1.22560	.46000	1.95220	.01200		.03000	.02000
TOTAL PENNATE DIATOMS	34.4132	4.51000	27.8302	.33400	6.35000	7.34000	1.22000
DINOFLAGELLATES:							
GYMNODINIUM	.51720	.29000	.68100	.10200	1.39000	.22000	.47000
GYRODINIUM	1.72960	.46000	.45460	2.08200	2.62000	1.70000	2.63000
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM					.02000		
CRYPTOMONADS (5-10U)	2.95900	51.2400	3.63200	2.30000	62.1300	108.300	128.000

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 26 TO 33 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	26	27	28	29	31	32	33
CRYPTOMONADS (11-20U)	12.7120	3.0600	1.0596	.0420	6.8000	4.6200	6.8500
TOTAL FLAGELLATE CELLS	22.1048	56.0600	6.5376	4.5560	73.4900	115.060	138.200
TOTAL PHYTOPLANKTON CELLS	434.296	1589.15	213.425	58.484	368.660	394.980	1086.50

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 26 TO 33 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	26	27	28	29	31	32	33
CHAETOCEROS CONSTRICTUM	12.0764		4.90320				
CHAETOCEROS CONVOLUTUM		.03000	.36320				
CHAETOCEROS DIADEMA	.91720		3.63200				
CHAETOCEROS LACINIOSUM	.54480		1.72520				
CHAETOCEROS SIMPLEX C. CALCITRANS	1.04420	.72000	1.16040	.12400	1.19000	.22000	
LAUDERIA BOREALIS	.09080		.63560				
LEPTOCYLINDRICUS MINIMUS	1.13500						
RHIZOSOLENIA ALATA F. ALATA			.09080				
RHIZOSOLENIA ALATA F. GRACILLIMA	.22700		.31760				
RHIZOSOLENIA FRAGILISSIMA V. ?	.59020		.31760				
THALASSIOSIRA ANGULATA		.01000					.06000
THALASSIOSIRA BINATA	.02700	.76000	4.31300	.02000	.66000	.56000	.40000
THALASSIOSIRA CONFERTA		.02000					
THALASSIOSIRA ECCENTRICA		.02000					
THALASSIOSIRA LEPTOPUS		.03000					
THALASSIOSIRA MENDIOLANA	7.56180	.26000	7.76340	.01000	.04000	.03000	
THALASSIOSIRA PACIFICA	53.3904	637.260	21.6104	.92400	119.700	83.7900	160.000
THALASSIOSIRA PROFUNDA	1.54360	359.100	2.72400	.10400	12.3000	5.15000	82.6000
THALASSIOSIRA PSEUDONANA							.06000
NAVICULA SPP.					.04000	.03000	
CYLINDROTHECA FUSIFORMIS		2.10000	1.16040	.09800	6.00000	6.85000	.58000
FRAGILLARIA OCEANICA	7.12780	.10000	2.27000	.02400	.16000	.10000	.46000
NITZSCHIA (BACILLARIA) SP.							.02000
NITZSCHIA GRANII		.04000	.09060		.01000		
NITZSCHIA PSEUDODELICATISSIMA	1.36200	1.56000	3.63200	.17400		.21000	.06000
NITZSCHIA SICAPITATA	2.54780	.76000		.02200	.51000	.19000	.25000
RAPHONEIS ROTUNDATUM	1.04420	.26000	.68160	.01000	.02000	.03000	
PROROCENTRUM BALTICUM	.27240		.54480				
PHOTOSYNTHETIC CILIATES		.07000					
MERINGOSPHAERA MEDITERRANEA	4.41240	26.5200	5.56520	3.05200	41.6100	49.0000	46.7000
CRYPTOMONAS SPP.		.76000					
OLISTHODISCUS SP.	95.3400	502.740	44.9460	29.2980	112.600	133.380	659.000
CHRYSOCHROMULINA SPP. & IMANTONIA							.22000
CORYMBELLUS AUREUS							

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 26 TO 33 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	: 26	27	28	29	31	32	33
PHAEOCYSTIS POUCHETII			2.24300				
PYRAMIMONAS SPP.	1.36200	.58000		.01800	.21000	.13000	.08000
PTEROSPERMA SPP.					.01000		

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 34 TO 40 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	34	35	36	37	38	39	40
CENTRIC DIATOMS:							
ACTINOPTYCHUS SENARIUS	3.54120	2.31540	1.54000	2.27000	.45400	.16000	.72640
BIDDULPHIA AURITA	.27240	.40860					
CERATAULINA BERGONII			.85000			.06000	
CHAETOCEROS AFFINIS	42.6576	163.807	4.73000	89.1668	2.13360	1.04000	93.6148
CHAETOCEROS COMPRESSUS	8.79960	60.0642	3.41000	38.2268	.27240	.04000	53.4812
CHAETOCEROS DEBILIS	.72640	8.62000	.14000		.13620	.68000	7.53640
CHAETOCEROS DIDYMUS	131.660	284.476	57.2000	93.9780	7.89960	5.20000	368.466
CHAETOCEROS ? RADICANS	10.7144	112.136	3.52000	25.1970	1.77000	.06000	41.2232
CHAETOCEROS SOCIALIS	.09080					.01000	.09080
COSCINODISCUS SPP.							
DITYLUM BRIGHTWELLII	.63560	.13620	.01000	.27240			
RHIZOSOLENIA DELICATULA	.13620	.13620	.28000	.27240	.09080	.06000	.54480
RHIZOSOLENIA FRAGILISSIMA	35.4120	39.7250	14.1000	34.9580	1.31660	.72000	48.6668
SKELETONEMA COSTATUM	.27240		.13000	.31780			.31780
THALASSIOSIRA AESTIVALIS		.13620			.13620		
THALASSIOSIRA DECIPIENS	4.71300	2.36000	.08000	.99880	.13620		2.40620
THALASSIOSIRA GRAVIDA/ROTULA	12.5304	5.58420	.86000	2.63320	.09080		4.54000
THALASSIOSIRA NORDENSKIOLDII			.04000				.13620
THALASSIOSIRA POLYCHORDA	1.13040	.05720	.34000	.54480	.13620	.16000	.68100
THALASSIOSIRA SPP.					.04540		
RHIZOSOLENIA SETIGERA	316.665	779.246	100.470	619.755	25.9190	35.3600	727.807
TOTAL CENTRIC DIATOMS							
PENNATE DIATOMS:							
ASTERIONELLA JAPONICA	35.9568	52.6040	11.0000	29.2358	1.49820	1.96000	32.2340
CYLINDROTHECA CLOSTERIUM			.36000			.02000	
CYMATOSIRA SPP.			.01000				
NITZSCHIA DELICATISSIMA	1.4.740	2.31540	.52000	2.31540	.18160	.06000	2.90550
NITZSCHIA LONGISSIMA	.36720	1.49820	.24000	.36320	.09080	.12000	.81720
NITZSCHIA PUNGENS	.13620	1.62960	.12000	.09080	.04540	.03000	.13620
NITZSCHIA SERIATA	.13620	.40860	.28000	.27240	.09080		.54480
THALASSIONEMA NITZSCHIOIDES	2.04300	1.63440	.16000	2.36080	1.90680	.76000	1.08960
TOTAL PENNATE DIATOMS	54.0212	75.0450	14.0200	50.5756	13.9378	4.04000	57.9303

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	34	35	36	37	38	39	40
DINOFLAGELLATES:							
GYMNODINIUM	1.36200	.64100	.08500	1.36200	.18100	.28000	
GYRODINIUM	1.50900	.22700	.23500	.22700	.13620	.10000	
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM	.13620			.09081	.04540	.02000	.05060
CRYPTOMONADS (5-10U)	20.7900	9.30700	4.72500	4.35640	28.1480	17.5000	14.5220
CRYPTOMONADS (11-20U)	9.53520	1.13500	.56700	27.2400	7.26400	1.01000	1.36200
EUTREPTIELLA SPP.						.03000	
TOTAL FLAGELLATE CELLS	30.6354	11.7132	5.62500	36.0022	30.6378	18.9800	21.6828
TOTAL PHYTOPLANKTON CELLS	537.541	455.398	145.350	675.312	374.232	67.3300	912.858

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-39 VARIANTS LIST - STATIONS 34 TO 40 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	34	35	36	37	38	39	40
CHAETOCEROS DANICUM						.02000	
RHIZOSOLENIA SPP.						.08000	
CYCLOTELLA CASPIA			.02000			.03000	
CHAETOCEROS CONSTRICTUM	3.63200	20.7406	3.00000	3.45040	.49940	.40000	16.3894
CHAETOCEROS CONVOLUTUM	.27240						.09080
CHAETOCEROS DIADEMA	2.72400	17.3429	1.76000	1.63440	.27240	.14000	12.7120
CHAETOCEROS LACINIOSUM	.54480				.09080		3.99520
CHAETOCEROS LORENZIANUM	.49940		.77000		.18160	.14000	3.46500
CHAETOCEROS SEPTENTRIONALE		.45400	.04000	.22700	.54480	.06000	2.08840
CHAETOCEROS SIMPLEX C. CALCITRANS	7.62720	1.13500	.05000	1.72520	3.67740		1.58900
CHAETOCEROS SUBTILE	.72640	.36320		.54480			
LAUDERIA BOREALIS	.77160	.81720	.15000			.08000	.54480
LEPTOCYLINDRICUS MINIMUS	.99980	.27240		1.72520	.72640		1.63440
RHIZOSOLENIA ALATA F. ALATA			.01000				
RHIZOSOLENIA ALATA F. GRACILLIMA	.36320	.40860	.16000	.09080	.04540	.06000	.54480
RHIZOSOLENIA FRAGILISSIMA V. ?	1.27120	1.22580		1.27120	.09080		.36320
THALASSIOSIRA BINATA			.12000			.10000	
THALASSIOSIRA CF. CONDENSATA			.12000				
THALASSIOSIRA CONFERTA	.90800	2.27000	.12000	1.27120	.04540	.16000	3.35960
THALASSIOSIRA ECCENTRICA			.04000			.06000	
THALASSIOSIRA LEPTOPUS		.27240	.16000	.13620	.09080	.56000	.90800
THALASSIOSIRA MENDIOLANA			.04000		.09080	.04000	.09080
THALASSIOSIRA PACIFICA	17.7968	11.2138	1.08000	9.67020	.68100	.22000	14.7096
THALASSIOSIRA PROFUNDA	26.2030	35.5936	.92000	17.7968	231.358	14.8000	2.08840
THALASSIOSIRA PSEUDONANA	5.62960	3.40500	5.04000	292.376	5.17500	10.2000	46.9600
ASTERIONELLA KARIANA	.77160	.45400	.15000	.09080	.18160	.07000	.54480
NAVICULA SPP.						.04000	
CYLINDROTHECA FUSIFORMIS	.27200	.09080	.03000		.04540	.08000	.09080
FRAGILLARIA OCEANICA	4.94960	.27240		4.94960	.18160	.24000	4.56540
NITZSCHIA (FRACILLARIA) SP.	5.99240	13.6260	.75000	6.08360	.59020		8.17200
NITZSCHIA GRANII	.36720	.54480	.04000		.04540		
NITZSCHIA PSEUDODELICATISSIMA	.36320			.27240			
PLEUROSIGMA ACUTUM		.09080					
NITZSCHIA BICAPITATA	5.31140	1.36200	.68000	5.53960	9.08000	.66000	6.81000

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	34	35	36	37	38	39	40
NAVICULA RUTUNDATUM		.22700		1.45280		.04000	
PROROCENTRUM BALTICUM	.22700	.13620	.03000	.99880	.77180		.09080
SCRIPPSIELLA E GLENODINIUM SPP.				.27240	.09080		.81720
PHOTOSYNTHETIC CILIATES	.36320			.45400	.18160		
APEDINELLA SPINIFERA				1.18040		.03000	
OCHROMONAS SPP.	45.7632	15.2090	2.70000	16.5710	5.44800	2.90000	2.90560
OLISTHODISCUS SP.				.27240			
CHRYSOCHROMULINA SPP. & PRYMNESIA	74.4560	72.6400	22.0000	148.912	55.3880	26.0000	87.6220
PHAEOCYSTIS POUCHETII			.64000				14.7096
PYRAMIMONAS SPP.		.54480	.20000	2.04300	4.63080		

PHYTOPLANKTON HAUL RESULTS - CRUISE 61-05 STANDARD LIST - STATIONS 41 TO 47 PAGE 1

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	41	42	43	44	45	46	47
CENTRIC DIATOMS:							
BACTERIASTRUM DELICATULA	.65160	.45460	.30320	.22000	.01800	1.18140	.22700
CERATULINA BERGONII			.09080			.09080	
CHAETOCEROS AFFINIS	3.05720						
CHAETOCEROS COMPRESSUS	7.09340	3.45640	13.25680	.24000	.00400	.22700	
CHAETOCEROS DEBILIS	4.44920	.95340	.63560	.08000	.01400	.27240	
CHAETOCEROS DECIPIENS		.27240					
CHAETOCEROS DIDYMUS	2.09560	.95340					
CHAETOCEROS ? RADICANS	79.03420	44.03580	82.44640	.26000	.02400	7.35480	.22700
CHAETOCEROS SOCIALIS	6.35600	2.36680	4.90320	.28000	.01200	.86260	.13620
COSCINODISCUS SPP.					.00600		
CORETHRON HYSTRIX				.01000			
RHIZOSOLENIA DELICATULA	.13620		.22700	.02000	.00800	.22700	
RHIZOSOLENIA FRAGILISSIMA	.59150	.45460	.72640	.08000	.03400	1.58900	.18160
SKELETONEMA COSTATUM	37.00120	21.09730	16.70720	.53000	.03600	1.18040	.72640
THALASSIOSIRA AESTIVALIS	.22700	.18160					
THALASSIOSIRA GRAVIDA/ROTULA	.45460	.18160			.00460	.04540	
THALLASIOSIRA NORDENSKIOLDII	1.36680	.40860	1.36200	.07600	.02600	.09080	.04540
THALASSIOSIRA POLYCHORDA	.04540						
THALASSIOSIRA SPP.	.09080	.40860		.01000		.31780	
TOTAL CENTRIC DIATOMS	107.75920	74.71640	129.46240	2?6.60?0	40.7180	79.7678	1973.27
PENNATE DIATOMS:							
ASTERIONELLA JAPONICA	62.05420	14.74160	36.03480	.21000	.02600	.99080	
CYLINDROTHECA CLOSTERIUM	.27240	.09080					
NITZSCHIA? DELICATISSIMA	1.72520	.99880	1.40740	.02000	.28000	.22700	
NITZSCHIA? LONGISSIMA	.13620	.09080	.21720		.01200	.04540	
NITZSCHIA? PUNGENS	.36320			.05000	.00400		
NITZSCHIA? SERIATA		.13620	.09080	.01000			
THALASSIONEMA NITZSCHOIDES	.09080	.72640	2.27000	1.02000	.03000	.13620	.77180
TOTAL PENNATE DIATOMS	74.27060	24.07160	44.03760	23.78000	1.28800	2.90560	80.7212
DINOFLAGELLATES:							.04540
CERATIUM				.01000			
DINOPHYSIS				.01000			
GYMNODINIUM	1.18560	.63560	.45460	.56000	.05600	.18160	.09080

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 41 TO 47 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	41	42	43	44	45	46	47
GYRODINIUM	.6356D	.6356D	1.9976D	.2200D	.1600D	.3632D	.8176D
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM						.6905D	
CRYPTOMONADS (5-10U)	2.7984D	11.6675	4.3846D	50.6800	20.4760	69.4620	53.7990
CRYPTOMONADS (11-20U)	.1816D	.9080D	2.8146D	30.2400	.9540D	4.3504D	3.0672D
CRYPTOMONADS (ALL)						73.8204	
TOTAL FLAGELLATE CELLS	4.7504D	15.3906	9.6772D	86.1900	23.0260	152.771	58.6838
TOTAL PHYTOPLANKTON CELLS	240.345	165.574	210.974	680.410	173.069	618.676	2439.16

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 VARIANTS LIST - STATIONS 41 TO 47 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D. :	41	42	43	44	45	46	47
PODOSIRA SPP.							.04080
CYCLOTELLA CASPIA	.04541	.04080					
ASTEROMPHALUS SARCOPHAGUS				.01000			
CHAETOCEROS BRLVE	.18160		.36320				
CHAETOCEROS CONSTRICTUM	4.81240	.31780					
CHAETOCEROS DIADEMA	3.72400	1.81600	1.27120			.27240	
CHAETOCEROS LORENZIANUM	.27240						
CHAETOCEROS SEPTENTRIONALE	.63560	.13620	.04080				
CHAETOCEROS SIMILE	.22700						
CHAETOCEROS SIMPLEX C. CALCITRANS	.18160		.27240	5.92000	.01400	1.36200	12.5304
CHAETOCEROS SUBTILE				.02000			
LAUDERIA BOREALIS	.18160	.13620	.04080	.02000			
LEPTOCYLINDRICUS MINIMUS	.86260		.45400	1.54000		.18160	8.17200
RHIZOSOLENIA ALATA F. GRACILLIMA				.06000	.00800	.09080	.04540
RHIZOSOLENIA FRAGILISSIMA V. ?				.56000			1.58900
THALASSIOSIRA BINATA	.36320			1.06000			
THALASSIOSIRA CONFERTA	1.08960	1.45280	1.72520	5.28000	.02800	.36320	.68160
THALASSIOSIRA ECCENTRICA		.13620		.02000	.00400		
THALASSIOSIRA LEPTOPUS	1.45280	.36320					
THALASSIOSIRA MENDIOLANA	.22700	.04080		.08000		.04540	
THALASSIOSIRA PACIFICA	1.81600	1.36200	.63560	.03000	.00600		
THALASSIOSIRA PROFUNDA				177.840	25.4560	15.4360	1583.73
THALASSIOSIRA PSEUDONANA	2.45160	2.72400	2.86020	84.3600	11.5140	46.5780	364.880
ASTERIONELLA KARIANA	.99880	.54480	.81720				
NAVICULA SPP.	.81720	.18160	1.27120				
THALASSIONEMA BACILLARIS						.04080	
CYLINDROTHECA FUSIFORMIS				.13000	.02000		.04540
FRAGILLARIA OCEANICA	.54480	.72640	.81720	10.3000	.26400	.36320	1.45280
NITZSCHIA (BACILLARIA) SP.	2.54240	1.72520	1.54760	.52000	.02400	.22700	2.17920
NITZSCHIA GRANII	.27240		.27240				
NITZSCHIA PSEUDODELICATISSIMA	.13620	.27240			.00400		
NITZSCHIA BICAPITATA	.81720	.18160	3.26880	2.92000	.02400	.81720	76.2720
KATODINIUM ROTUNDATUM		1.54360	.18160	.56000	.59400	3.26880	.36320
PROROCENTRUM BALTICUM	.22700		.13620	3.92000	.31400	1.22580	.54480

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 1000)

STATION I.D.	41	42	43	44	45	46	47
SCRIPPSIELLA & GLENODINIUM SPP.	.13620			.07000	.02000		.13620
PHOTOSYNTHETIC CILIATES				.10000	.00800		.13620
APEDINELLA SPINIFERA				.72000			.27240
MERINGOSPHAERA MEDITERRANEA	.09360						
OCHROMONAS SPP.	32.0370		14.0740	44.0000	19.1100	31.7800	39.4072
OLISTHODISCUS SP.				.20000			1.90680
CHRYSOCHROMULINA SPP. & IMANTONIA	7.70340	41.3140	9.17060	241.000	56.4000	350.851	272.037
CONYAULELLUS AUREUS				2.00000			1.13500
PHAEOCYSTIS POUCHETII	1.09960						
PYRAMIMONAS SPP.		.13620		4.26000	.52400		11.5316

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 48 TO 55 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D. :	48	49	50	51	52	53	55
CENTRIC DIATOMS:							
BACTERIASTRUM DELICATULA	.31780		.34000		.18160	1.36200	.06800
BIDDULPHIA AURITA			.02000				
CHAETOCEROS AFFINIS			.12000			.09080	.04000
CHAETOCEROS COMPRESSUS	6.56300		7.58000			6.08360	1.57000
CHAETOCEROS DEBILIS	1.90680		.25000			.63560	.16000
CHAETOCEROS DECIPIENS						.27240	
CHAETOCEROS DIDYMUS	2.31540		.68000		.18160	.27240	.20000
CHAETOCEROS ? RADICANS	65.60940		5.20000		.09080	13.62000	9.05000
CHAETOCEROS SOCIALIS	9.95300		.48000		.31780	4.44920	1.17000
COSCINODISCUS SPP.	.04540						.01000
CORETHRON HYSTRIX			.03000				
RHIZOSOLENIA DELICATULA			.08000	.03000			
RHIZOSOLENIA FRAGILISSIMA	.27240	.22700	.46000	.12000	1.45280		
SKELETONEMA COSTATUM	12.63100		14.50000		.36320	5.99280	1.75000
THALASSIOSIRA GRAVIDA/ROTULA	.09080		.02000				.03000
THALLASIOSIRA NORDENSKIOLDII	2.08840		.85000	.04000		.72640	.09000
THALASSIOSIRA POLYCHORDA	.09080		.02000				.02000
THALASSIOSIRA SPP.	.54480	.09080	.27000			.09080	
TOTAL CENTRIC DIATOMS	109.6114	157.2254	33.08600	450.9440	819.4425	365.3334	50.41000
PENNATE DIATOMS:							
ASTERIONELLA JAPONICA	5.85620	91.26440		.04000	.18160	6.53760	3.56000
GYRO/PLEUROSIGMA SPP.							.01000
NITZSCHIA? DELICATISSIMA	.63560		.46000	.31000	1.63440	.45400	.56000
NITZSCHIA? LONGISSIMA	.49940		.03000			.09080	.10000
NITZSCHIA? PUNGENS	.59020		.27000				.04000
NITZSCHIA? SERIATA	.36320		.05000		.04540	.09080	
THALASSIONEMA NITZSCHIOIDES	.18160	1.45280	.57000	.13000	2.36040	.95340	.40000
TOTAL PENNATE DIATOMS	15.88900	165.26620	2.51000	16.72700	65.24220	12.89360	5.57000
DINOFLAGELLATES:							
GYMNODINIUM	.18160	.09080	.18000	.07000	.40860	1.81600	.32000
GYRODINIUM		.22700		.36000	2.17920	.36320	

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10000)

STATION I.D.	: 48	49	50	51	52	53	55
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM							
CRYPTOMONADS (5-10U)	7.35460	49.0320	.02000		.13620	.27240	
CRYPTOMONADS (11-20U)	1.08960	4.44920		57.9000	53.5720	46.3060	
EUTREPTIELLA SPP.				2.44000	2.27000	6.02840	
TOTAL FLAGELLATE CELLS	8.44360	55.3680	.23000	66.8300	.09080		
TOTAL PHYTOPLANKTON CELLS	240.047	2257.61	73.03400	424.080	69.0252	64.3772	.32000
					1318.46	761.721	64.0000

PHYTOPLANKTON HAUL RESULTS - CRUISE A1-75 VARIANTS LIST - STATIONS 42 TO 55 PAGE 1

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	42	43	45	51	52	53	55
ASTEROMPHALUS SARCOPHAGUS						.09580	
CHAETOCEROS CONSTRICTUM			.68003			.22700	.32000
CHAETOCEROS CONVOLUTUM			.53000			.09080	
CHAETOCEROS DIADEMA	2.27000		.20000				.40000
CHAETOCEROS LACINIOSUM			.16000				
CHAETOCEROS LORENZIANUM						.63560	
CHAETOCEROS SEPTENTRIONALE	.27240		.02000				.08000
CHAETOCEROS SIMPLEX C. CALCITRANS		10.62150		4.50060	7.40880	1.72520	.32000
CHAETOCEROS SUBTILE							.01000
LAUDERIA BOREALIS	.09080		.12000			.49040	
LEPTOCYLINDRICUS MINIMUS		5.35620		6.55000	11.80040		
RHIZOSOLENIA ALATA F. ALATA			.02000				
RHIZOSOLENIA ALATA F. GRACILLIMA			.02020				
RHIZOSOLENIA FRAGILISSIMA V. ?		.95340		.44000	2.31540		
THALASSIOSIRA ANGULATA	.09080		.02000				.04000
THALASSIOSIRA MINATA	.45400	.27240		.40000	2.43620		.12000
THALASSIOSIRA CONFERTA	1.54360	2.36060	.41000	5.46000	23.68004	2.63320	.27000
THALASSIOSIRA LEPTOPUS							.04000
THALASSIOSIRA MENDIOLANA	.18160		.02000			.13620	.02000
THALASSIOSIRA MINUSCULA							.04000
THALASSIOSIRA PACIFICA	.68730	.13620	.42000	.02000	.04540	.27240	.20000
THALASSIOSIRA PROFUNDA	41.03270	1164.0800		345.4620	615.4960	97.88424	25.15000
THALASSIOSIRA PSEUDONANA	10.11170	352.0940		87.78600	152.6000	227.5450	9.20000
NAVICULA SPP.			.20000				
THALASSIONEMA BACILLARIS	.09080						
CYLINDROTHECA FUSIFORMIS			.32000	.02000	.09080	.13620	
FRAGILLARIA OCEANICA		.72640	.08000	7.72000	25.33320	2.72400	.24000
NITZSCHIA (BACILLARIA) SP.	4.31860	3.81480	.73000	1.02000	1.81800	1.54360	.48000
NITZSCHIA PSEUDODELICATISSIMA			.06000				
NITZSCHIA SIGMATATA	.09080	24.02140		7.50000	31.78400	.36320	.20000
RHIZONIUM BOTRYOIDEUM	.31720	.45360		7.93000	6.51000	7.44960	
PRODUCERTRUM BALTICUM		.45400		1.44000	4.35640	1.08960	
SCRIPSIELLA & GLENODINIUM SPP.			.02000				
PHOTOSYNTHETIC CILIATES		.09080		.10000	1.09000	.41720	

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 1.0E+03)

STATION I.D.	48	49	50	51	52	53	55
APEDINELLA SPINIFERA				.060C0			
MERINGOSPHAERA MEDITERRANEA	.13623						.02000
MICROMONAS SPP.	1.13340	35.41200	5.72000	16.00000	33.59060	10.80052	.36000
ULISTHODISCUS SP.		.60100		.45000	1.72520		
CHRYSOCHROMULINA SPP. & IMANTONIA	20.33220	454.7401	31.97200	369.3600	326.6944	307.9448	7.30000
CORYMBELLUS AUREUS		1.67980		.96000	2.06840		
PHAEOCYSTIS POUCHETII						.36320	
PYRAMIMONAS SPP.		2.86020		3.44000	2.36060		

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-05 STANDARD LIST - STATIONS 56 TO 57 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	56	57
CENTRIC DIATOMS:		
BACTERIASTRUM DELICATULA	.0400	
CHAETOCEROS AFFINIS	.0500	
CHAETOCEROS COMPRESSUS	.6600	2.6332
CHAETOCEROS DEBILIS	.1500	.8172
CHAETOCEROS DECIPIENS	.0600	
CHAETOCEROS DIDYMUS	.2400	.4086
CHAETOCEROS ? RADICANS	5.9100	9.8064
CHAETOCEROS SOCIALIS	.1600	1.8614
SKELETONEMA COSTATUM	.7200	1.8160
THALASSIOSIRA AESTIVALIS	.0300	
THALASSIOSIRA GRAVIDA/ROTULA	.2400	.0908
THALLASIOSIRA NORDENSKIOLDII	.2400	.1816
THALASSIOSIRA POLYCHORDA		.0908
THALASSIOSIRA SPP.	.1600	.1362
TOTAL CENTRIC DIATOMS	145.920	695.268
PENNATE DIATOMS:		
ASTERIONELLA JAPONICA	1.5000	1.4982
CYLINDROTHECA CLOSTERIUM	.0500	.0908
NITZSCHIA? DELICATISSIMA	.5100	.9080
NITZSCHIA? LONGISSIMA	.2400	.4540
NITZSCHIA? SERIATA		.0908
THALASSIONEMA NITZSCHOIDES	.1600	.2724
TOTAL PENNATE DIATOMS	7.2900	4.3430
DINOFLAGELLATES:		
CERATIUM		.0454
GYMNODINIUM	.5200	.2724
FLAGELLATES AND OTHERS:		
DISTEPHANUS SPECULUM		.0908
CRYPTOMONADS (5-10U)	4.5500	1.1340
CRYPTOMONADS (11-20U)	.5000	1.0896
TOTAL FLAGELLATE CELLS	6.5500	5.2234
TOTAL PHYTOPLANKTON CELLS	213.140	704.634

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	56	57
CHAETOCEROS CONSTRICTUM	.45000	.63560
CHAETOCEROS CONVOLUTUM	.05000	
CHAETOCEROS DIADEMA	.00000	.72640
CHAETOCEROS SEPTENTRIONALE		.09080
CHAETOCEROS SIMILE		.13620
CHAETOCEROS SIMPLEX C. CALCITRANS	.12000	.27260
CHAETOCEROS SUBTILE	.09000	.18160
THALASSIOSIRA ANGULATA	.27000	1.22580
THALASSIOSIRA BINATA	.36000	
THALASSIOSIRA CONFERTA	.21000	.72640
THALASSIOSIRA ECCENTRICA	.09000	.18160
THALASSIOSIRA LEPTOPUS	.12000	
THALASSIOSIRA MENDIOLANA	.02000	.36320
THALASSIOSIRA PACIFICA	.27000	.36320
THALASSIOSIRA PROFUNDA	49.59000	181.146
THALASSIOSIRA PSEUDONANA	124.94000	481.231
NAVICULA SPP.	.03000	
CYLINDROTHECA FUSIFORMIS	.03000	
NITZSCHIA (BACILLARIA) SP.	.21000	.99880
NITZSCHIA PSEUDODELICATISSIMA	.02000	
NITZSCHIA BICAPITATA	.48000	
KATODINIUM ROTUNDATUM	.09000	.40860
PROROCENTRUM BALTICUM		.09080
SCHIPPSIELLA & GLENODINIUM SPP.		.04540
PHOTOSYNTHETIC CILIATES		.09080
APLANELLA SPINIFERA		.09080
OCHROMONAS SPP.	3.39000	2.86020
OLISTHODISCUS SP.	.03000	
CHRYSOCHROMULINA SPP. & IMANTONIA	13.05000	9.71660
PYRAMIMONAS SPP.	1.03000	.13620

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 6 TO 18 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D. :	6	9	10	12	14	15	18
BENTHIC DIATOMS:							
BIDDULPHIA LONGICORNIS							.16160
CERATULINA BERGONII	3.49560	.47060			.05000	1.49760	2.27000
CHAETOCEROS AFFINIS					.17000		
CHAETOCEROS COMPRESSUS					.41000		
CHAETOCEROS DEBILIS	109.923	15.3456	.24000	1.67000	.37000	171.436	264.228
CHAETOCEROS DIDYMUS	.91720	.05080			.11000	.90800	5.71680
CHAETOCEROS ? RADICANS	2.22460	.36320				.45400	.27240
CHAETOCEROS SOCIALIS	4.02680	1.85140	.16000	.04600	.04000	1.72520	7.44560
COSCINODISCUS SPP.			.01000		.01000		.16160
DACTYLIOSOLENS MEDITERRANEUS					1.21000		
DITYLUM BRIGHTWELLII	.04840					.04540	.04540
EUCAMPIA ZODIACUS	12.30534	4.17680	.02000	.10000	.05000		15.16360
LEPTOCYLINDRUS DANICUS	1.04420	.06260	.04000	.06000		.09080	.45400
RHIZOSOLENIA DELICATULA		.09080	.02000	.07000		.09080	.09080
RHIZOSOLENIA FRAGILISSIMA				.01000	.02000		.04540
RHIZOSOLENIA STOLTERFOTHII	1.54360	.13620	.04000	.03000	.26000	1.22580	1.63440
SCHRODERELLA DELICATULA		.49080					
SKELETONEMA COSTATUM	1.36200						
THALASSIOSIRA NORDENSKIOLDII	.44940	.13620		.03000	.03000	.13620	.27240
THALASSIOSIRA POLYCHORDA		.13620	.02000	.06000	.02000	.09080	.18160
THALASSIOSIRA SPP.	.09720	.19080				.04540	.18160
RHIZOSOLENIA HERATATA					.01000		
RHIZOSOLENIA SETIGERA	.00200					.18160	.31780
TOTAL CENTRIC DIATOMS	185.722	55.75080	1.65000	3.02100	12.08400	243.843	405.735
PENNATE DIATOMS:							
ASTERIONELLA JAPONICA	.13620	.04540		.11000		.36320	1.00980
CYLINDROTHECA CLOSTERIUM			.01000		.12000		
NITZSCHIA? DELICATISSIMA	.31720		.03000	.06000	2.66000		
NITZSCHIA? LONGISSIMA	.03620	.02720	.03000	.12000	.29000	.54480	5.81120
NITZSCHIA? SERIATA	2.61020	2.04300	2.59000	.43000	.25000	4.44920	4.13140
THALASSIONEMA NITZSCHOIDES	.13620	.17020	.06000	.02000	.04000	.77180	1.18040
TOTAL PENNATE DIATOMS	15.04460	5.17020	4.39000	1.30000	123.23?	16.70?2	57.83?46

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 6 TO 18 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION NO.	6	8	10	12	14	16	18
DINOFLAGELLATES:							
CERATIUM	.13E0	.0454			.09E0		
DINOPHYSIS		.0454				.0454	.0454
GYMNODINIUM	1.9464	.0454	.57E0	2.02E0	5.05E0	1.72E2	1.9LE0
GYMNODINIUM	.3032	.5E32	.20E0	.09E0	4.50E0	.4644	.E35E
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM	.0454	.0E0E	.07E0	.05E0			.27E0
CRYPTOMONAS (5-10U)	8.4464	3.0136	.98E0	1.26E0	3.04E0	1.5E42	1.9E8E
CRYPTOMONAS (11-20U)	7.1278	4.63E6	1.32E0	4.32E3	.48E0	3.0E72	15.52E
EUTREPTIELLA SPP.		.0954	.05E0	.16E0			
TOTAL FLAGELLATE CELLS	18.160	10.623	3.47E0	9.8E0L	16.27E	7.536	20.611
TOTAL PHYTOPLANKTON CELLS	243.442	95.516	51.1E0	52.92E	216.49	295.12	637.A7

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-17 VARIANTS LIST - STATIONS 6 TO 16 PAGE 1

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D. :	6	8	10	12	14	15	16
POLOSIRA SPP.							.22760
CYCLOTELLA CASPIA		.09080					
ACTINOPTYCHUS UNDULATUS				.04060			
ASTEROMPHALUS SARCOPHAGUS	.22700		.27060	.11060		.13620	
CHAETOCEROS BOREALE							.22760
CHAETOCEROS BREVE							.27240
CHAETOCEROS CONSTRICTUM	32.77640	1.77060			1.35060	27.2400	48.44180
CHAETOCEROS CONVOLUTUM	.09080	.18160	.06060	.04060	.20060	.31760	.99860
CHAETOCEROS DIADEMA	.22700				1.18060	1.04420	2.45160
CHAETOCEROS LACINIOSUM		.22700		.04060	.43060	.81720	
CHAETOCEROS LORENZIANUM	1.27120	.49940		.12060	.19060	1.95220	9.94260
CHAETOCEROS PELAGICUM				.04060			
CHAETOCEROS PSEUDOCRINITUM	.77180	.18160		.18060	.06060		
CHAETOCEROS SEPTENTRIONALE	.81720	.04540				.68160	
CHAETOCEROS SIMILE			.06060	.04060			
CHAETOCEROS SIMPLEX C. CALCITRANS	1.18040	1.36200	.24060	.24060		.09080	12.4850
LAUDERIA BOREALIS	.45360	.27240		.06060	.02060	1.18040	3.40500
LEPTOCYLINDRICUS MINIMUS						.27240	.45340
RHIZOSOLENIA ALATA F. ALATA					.32060		
RHIZOSOLENIA ALATA F. GRACILLIMA					.09060		
RHIZOSOLENIA FRAGILISSIMA V. ?			.06060		.36060		
THALASSIOSIRA CF. CONDENSATA					.24060		
THALASSIOSIRA CONFERTA	2.36080	1.95460	.51060	.54060	5.44060	1.86140	3.26860
THALASSIOSIRA ECCENTRICA				.04060		.09080	
THALASSIOSIRA MENDIOLANA				.01360			
THALASSIOSIRA PACIFICA	.13620		.02060		.04060		1.06960
THALASSIOSIRA PROFUNDA				13.9060		12.9340	
THALASSIOSIRA PSEUDONANA	17.2520	24.1520		12.6060		10.7980	24.2860
NAVICULA SPP.				.01060	.24060		
THALASSIONEMA BACILLARIS			.12060		.13060	.09080	
THALASSIOTHRIX FRAUENFELDII					.01060		
DIPLONEIS LEPIDOPTERA				.02060			
AMPHORA SPP.			.11060	.01060	.03060		
CYLINDROTHECA FUSIFORMIS		.13620	.02060	.03060	.01060		

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	6	8	10	12	14	15	16
CYLINDROTHECA SPP.		.29040	.05000	.03000			
FRAGILLARIA OCEANICA	.72640		1.02000	.36000	49.49000	.54460	
NITZSCHIA (HACILLARIA) SP.	11.21320	2.45160	.13000	.13000		9.62480	45.6270
NITZSCHIA PROLONGATOIDES					9.13000	.18160	
NITZSCHIA PSEUDOFELIATISSIMA	.29040				.42000		
NITZSCHIA TURGIDULA/TURGIDULOIDES					4.06000	.13620	
NITZSCHIA SUBFRAUDULENTA					14.28000		
NITZSCHIA CF. SUBPACIFICA					1.17000		
RATODINIUM ROTUNDATUM			.04000	.44000			
PROROCENTRUM BALTICUM			.05000	.09000			.36320
PRORUCENTRUM GRACILE						.18160	
"GONYAULAX" RUGOSUM (GYMNO.)						.09060	
SCRIPPSIELLA & GLENODINIUM SPP.	.13620	.63560	.03000	.06000		.31780	
PHOTOSYNTHETIC CILIATES	.81720	1.72520	.13000	.10000		.18160	.54020
APEDINELLA SPINIFERA	.45400	1.36200	.20000	.14000		1.27120	
DINOBRYON SUECICUM	.72640	.63560	.32000	.40000		.36320	
MERINGOSPHAERA MEDITERRANEA	.31780	.95340	.12000	.17000		.13620	
OCHROMONAS SPP.	.95200	4.35840	6.72000	6.20000	6.30000	2.54240	12.1672
OLISTHODISCUS SP.			.04000			.18170	
CHRYSOCHROMULINA SPP. & IMANTONIA	9.17060	13.3476	33.3200	4.36400	57.5400	17.7060	132.265
CORYMBELLUS AUREUS	.95340		.75000	.59000		4.63060	1.90680
PHAEOCYSTIS POUCHETII					1.22000		
PYRAMIMONAS SPP.	1.67340	3.72260	.09000	.34000		.18160	3.40500
PTEROSPERMA SPP.				.03000			

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-17 STANDARD LIST - STATIONS 25 TO 34 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	25	27	28	29	31	33	34
CENTRIC DIATOMS:							
CHAETOCEROS COMPRESSUS							.0700
CHAETOCEROS DEBILIS	.1600	.0700		.0300	.0100		1.3000
CHAETOCEROS DIDYMUS		.1700					.0600
CHAETOCEROS ? RADICANS					.0400		
CHAETOCEROS SOCIALIS	.0600	.2600		.0300	.0800		.0800
LEPTOCYLINDRUS DANICUS				.0900			.0300
RHIZOSOLENIA DELICATULA							.0300
RHIZOSOLENIA FRAGILISSIMA	.0200	.0400					
RHIZOSOLENIA STOLTERFOTHII	.1600	.2700	.1200	.0300	.0600		.0500
SKELETONEMA COSTATUM	.4900			.0500	.0800		
THALASSIOSIRA NORDENSKIOLDII				.0200			.0300
THALASSIOSIRA POLYCHORDA	.0100			.0100	.0100		.0200
THALASSIOSIRA SPP.					.0100		
RHIZOSOLENIA SETIGERA	.0200						
TOTAL CENTRIC DIATOMS	99.7200	123.1000	49.9200	22.2600	32.7700	63.6600	94.6300
PENNATE DIATOMS:							
CYLINDROTHECA CLOSTERIUM	.0300	.0700			.0200		.0300
LICMOPHORA SPP.		.0500					
NITZSCHIA? DELICATISSIMA	.2400	.4300	.4200	.1200	.0300	.0400	.1300
NITZSCHIA? LONGISSIMA	.0200	.0300		.0100	.0800	.0600	.0400
NITZSCHIA? PUNGENS							.0300
NITZSCHIA? SERIATA		.9600	4.4200	5.3600	.0500	.1200	1.4600
THALASSIONEMA NITZSCHOIDES	.5000	.1300		.0900	.1300		.0600
TOTAL PENNATE DIATOMS	2.1700	15.8500	32.8700	14.3600	2.1000	66.7300	10.9700
DINOFLAGELLATES:							
CERATIUM			.0300				
GYMNODINIUM	.2400	1.0400	1.9700	1.5600	.4200	.6200	1.4200
GYRODINIUM	.2600	.6300	.9800	1.1400	.1700	.4000	.7600
FLAGELLATES AND OTHERS:							
DISTEPHANUS SPECULUM		.0400					.0700
CRYPTOMONADS (5-10U)	3.9200	35.2500	38.6400	5.6300	6.5200	36.2000	30.2400
CRYPTOMONADS (11-20U)	3.4100	2.5200	5.2000	3.5000	.1600	.6000	2.4200
EUTREPTIELLA SPP.						.0200	

PHYTOPLANKTON HAUL RESULTS - CRUISE 71-07 STANDARD LIST - STATIONS 20 TO 34 PAGE 2
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 1.E**4)

STATION I.D.	:	28	27	26	29	31	33	34
TOTAL FLAGELLATE CELLS		6.9470D	40.4450	47.9400	13.0650	7.1290D	38.4790	35.0200
TOTAL PHYTOPLANKTON CELLS		140.040	326.590	227.540	66.2460	53.8300	247.610	210.610

PHYTOPLANKTON HAUL RESULTS - CRUISE 1-77 VARIANTS LIST - STATIONS 20 TO 34 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	20	23	26	29	31	33	34
ASTEROMPHALUS SARCOPHAGUS				.03000			
CHAETOCEROS CONVOLUTUM	.05100	.06000	.07000			.02000	.03000
CHAETOCEROS SEPTENTRIONALE	.13000						
CHAETOCEROS SIMPLEX C. CALCITRANS	.11000	.13000	.13000	.08000	.12000	.08000	.14000
LAUDERIA BOREALIS				.03000			.10000
RHIZOSOLENIA FRAGILISSIMA V. ?		.06000	.05000	.02000			.04000
THALASSIOSIRA CONFERTA		.56000	3.07000	.74000	.36000	.90000	1.86000
THALASSIOSIRA PACIFICA		.10000					.04000
THALASSIOSIRA PROFUNDA	17.67000	20.52000	5.86000	13.90000	20.20000	92.66000	88.35000
THALASSIOSIRA PSEUDONANA	80.94000	100.89000	45.60000	7.26000	11.80000		2.36000
CYLINDROTHECA FUSIFORMIS	.03000				.02000		
CYLINDROTHECA SPP.	.01000	.04000	.45000		.01000	.34000	.22000
FRAGILLARIA OCEANICA	.07000	13.60000	27.44000	8.35000	1.42000	96.07000	8.60000
NITZSCHIA (BACILLARIA) SP.	.95000	.48000	.07000	.34000	.32000	.10000	.16000
NITZSCHIA PROLONGATOIDES				.02000	.02000		.04000
NITZSCHIA PSEUDODELICATISSIMA	.02000						
NITZSCHIA TURGIDULA/TURGIDULOIDES		.06000		.07000			.13000
KATODINIUM ROTUNDATUM	.11000	.89000	1.06000	1.23000	.05000	.36000	.36000
PROROCENTRUM BALTICUM						.03000	
PROROCENTRUM GRACILE			.05000				
SCRIPPSIELLA & GLENODINIUM SPP.	.01000					.02000	.13000
PHOTOSYNTHETIC CILIATES	.06000	.10000		.04000	.02000		
APEDINELLA SPINIFERA	.02000	.09000		.03000			.06000
DINOBRYON SULCICUM				.31000			.06000
MERINGOSPHAERA MEDITERRANEA	.06000	.12000		.16000			.07000
OCHROMONAS SPP.	10.49000	17.10000	1.04000	1.75000	1.68000	1.96000	8.32000
OLISTHODISCUS LUTEUS	.20000						.04000
OLISTHODISCUS SP.				.01000		.14000	.08000
CHRYSOCHROMULINA SPP. & IMANTONIA	68.47000	119.70000	92.03000	14.30000	10.10000	36.65000	61.42000
CORYMBELLUS AUREUS			.94000				.10000
PYRAMIMONAS SPP.	.04000	10.15000	2.25000		.06000	.04000	.04000
PTEROSPERMA SPP.						.03000	

PHYTOPLANKTON HAUL RESULTS - CRUISE 81-07 STANDARD LIST - STATIONS 35 TO 43 PAGE 1
(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**##)

STATION I.D.	35	36	38	40	41	43
CENTRIC DIATOMS:						
BIDDULPHIA LONGICRURIS					.04540	
CERATULINA BERGONII	.95740		.09080		.63560	.02600
CHAETOCEROS AFFINIS			.31780	.19000		
CHAETOCEROS COMPRESSUS	.81720		.45400	.57000		.01600
CHAETOCEROS DEBILIS	133.745	.02000	.27240	.74000	65.3760	.05000
CHAETOCEROS DIDYMUS	1.04420		.18160	.31000	.46260	.01200
CHAETOCEROS SOCIALIS	12.6956		1.54360	.16000	11.0776	.04000
COSCINODISCUS SPP.				.01600		
DACTYLIOSOLENS MEDITERRANEUS			.36320	.32000		
EUCAMPIA ZODIACUS	4.63060			.04000		
LEPTOCYLINDRUS DANICUS	1.41660			.08000	.36320	.00800
RHIZOSOLENIA DELICATULA	1.04420				.04540	.00400
RHIZOSOLENIA FRAGILISSIMA	.09080		.13620	.03000		.01200
RHIZOSOLENIA STOLTERFOTHII	2.17920	.03000	.09080	.05000	1.58900	.01400
SKELETONEMA COSTATUM		.04000	.45360	.10000		.10600
THALASSIOSIRA GRAVIDA/ROTULA		.01600				
THALASSIOSIRA POLYCHORDA	.13620					
THALASSIOSIRA SPP.		.03000			.04540	
RHIZOSOLENIA HERATATA					.22700	
RHIZOSOLENIA SETIGERA	.04540					
TOTAL CENTRIC DIATOMS	212.245	54.4400	9.89720	6.02000	164.076	33.1160
PENNATE DIATOMS:						
ASTERIONELLA JAPONICA					.09080	
CYLINDROTHECA CLOSTERIUM			.09080			
NITZSCHIA? DELICATISSIMA	.27240	.11000	1.27120	1.04000	.40860	.02600
NITZSCHIA? LONGISSIMA	.63560	.02000	.18160		.09060	.03600
NITZSCHIA? PUNGENS		.04000				
NITZSCHIA? SERIATA	12.6580	.10000	.22700	.12000	.63560	.01200
THALASSIONEMA NITZSCHOIDES	.72640	.17000	.31780	.26000	.18160	.00800
TOTAL PENNATE DIATOMS	73.3732	.49000	56.8862	18.4600	78.5874	.13000
DINOFLAGELLATES:						
CERATIUM	.09080	.02000		.02000		
DINOPHYSIS		.01000				

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D. :	35	36	38	40	41	43
GYMNODINIUM	.40860	1.22000	3.54120	3.83000	5.44800	.10200
GYRODINIUM	.22700	.38000	19.06582	13.05000	1.86140	.07800
FLAGELLATES AND OTHERS:						
DISTEPHANUS SPECULUM		.05000		.05000	.45400	
CRYPTOMONADS (5-10U)	.45460	5.58000		.38000	6.53760	3.76000
CRYPTOMONADS (11-20U)	.27240	1.28000		.12000	7.99040	.68800
EUTREPTIELLA SPP.					.04540	.00800
TOTAL FLAGELLATE CELLS	2.78840	8.59000	23.24483	17.50000	24.37988	5.05200
TOTAL PHYTOPLANKTON CELLS	711.716	84.63000	338.0594	96.45000	422.175	68.05000

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	35	36	38	40	41	43
CYCLOTELLA CASPIA						.00400
ASTEROMPHALUS SARCOPHAGUS		.02000				
CHAETOCEROS AFFINE V. WILLEI				.12000		
CHAETOCEROS ATLANTICUM			.13620	.10000		
CHAETOCEROS CONSTRICTUM	41.7560	.10000	.59020	.35000	25.7472	.01400
CHAETOCEROS CONVOLUTUM	1.40740	.04000	.09080		.09540	.01000
CHAETOCEROS DIADEMA	.09540			.36000	.40860	.00800
CHAETOCEROS LACINIOSUM				.06000		
CHAETOCEROS LORENZIANUM	1.86140		.68260	.02000	.63560	.02600
CHAEROCEROS PELAGICUM			1.72520	.36000		
CHAETOCEROS PSEUDOCRINITUM				.08000	.68100	.00800
CHAETOCEROS SEPTENTRIONALE	.27240					
CHAETOCEROS SIMPLEX C. CALCITRANS	1.54360	.08000	.13620		4.63080	.05800
CHAETOCEROS SUBTILE	.18160					
LAUDERIA BOREALIS	1.54360				.68100	.00800
LEPTOCYLINDRICUS MINIMUS	.22700					
RHIZOSOLENIA ALATA F. ALATA	.04540		.18160	.36000		
RHIZOSOLENIA ALATA F. GRACILLIMA			.04540			
RHIZOSOLENIA FRAGILISSIMA V. ?	.04540		.54480	.55000		.01000
RHIZO. STYLIFORMIS V. STYLIFORMIS				.04000		
THALASSIOSIRA CF. CONDENSATA		.04000				
THALASSIOSIRA CONFERTA	1.72560	.54000	1.63440	1.50000	1.36200	.07400
THALASSIOSIRA ECCENTRICA				.02000		
THALASSIOSIRA PACIFICA	.18160	.03000	.09080		.09060	.02000
THALASSIOSIRA PROFUNDA		5.20000			32.2340	17.6700
THALASSIOSIRA PSEUDONANA	1.58900	48.1620			16.3440	14.9340
THALASSIONEMA BACILLARIS			.09080	.18000		
THALASSIOTHRIX LONGISSIMA				.01000		
CYLINDROTHECA FUSIFORMIS		.01000				
CYLINDROTHECA SPP.			.18160	.09000	12.3488	
FRAGILLARIA OCEANICA	.09080	.26000	40.6330	7.90000	63.5600	
NITZSCHIA (BACILLARIA) SP.	56.1120	.11000	.63560	.14000	1.27120	.04000
NITZSCHIA PROLONGATOIDES			3.35960	5.96000		.00800
NITZSCHIA TURGIDULA/TURGIDULOIDES		.26000	3.99520	.79000		

(VALUES ARE NUMBER OF ORGANISMS/LITER - DIVIDED BY 10**4)

STATION I.D.	35	36	38	40	41	43
NITZSCHIA SUBFRAUDULENTA			4.35840	.72000		
NITZSCHIA CF. SUBPACIFICA			1.54360	1.25000		
KATODINIUM ROTUNDATUM	.27240	.30000		.05000	2.04300	.40400
PROROCENTRUM BALTICUM		.05000				
SCRIPPSIELLA & GLENODINIUM SPP.	.76320		.04540			.01200
PHOTOSYNTHETIC CILIATES	1.09760	.04000			3.22340	.02400
APEDINELLA SPINIFERA	.15160	.04000				.02600
MERINGOSPHAERA MEDITERRANEA	.04542					
OCHROMONAS SPP.	.09980	2.52000	21.7920	5.75000	22.9270	3.16000
OLISTHODISCUS LUTEUS						.07200
OLISTHODISCUS SP.		.36000				
CHRYSOCHROMULINA SPP. & IMANTONIA	26.08340	10.50000	224.274	46.7200	137.205	25.9920
CORYMBELLUS AUREUS	2.04300	.10000				
PYRAMIMONAS SPP.	.27200	1.16002				.50200

APPENDIX 1

A method of estimating the accuracy of nutrient concentration measurements through statistical analysis of duplicate readings.

Let y_t = true value;

y_r = measured value; and

e = expected fractional error.

Then $y_r = y_t(1+e)$

The implicit assumption is that the variance of measurements is proportional to their mean value. This assumption was tested by graphical analysis of the data.

Taking the logarithm gives: $\ln(y_r) = \ln(y_t) + \ln(1+e)$

If $e \ll 1$, then $\ln(1+e) \simeq e$.

Thus $\ln(y_r) = \ln(y_t) + e$.

If y_1 and y_2 are replicate measurements of the same nutrient concentration, we have:

$$\ln(y_1) - \ln(y_2) = e_1 - e_2$$

Letting $D = \ln(y_1) - \ln(y_2)$, and squaring and averaging gives:

$$\overline{D^2} = \overline{e_1^2} - 2\overline{e_1 e_2} + \overline{e_2^2}$$

But e_1 and e_2 are uncorrelated, and therefore $\overline{e_1 e_2} \to 0$ for large N.

Thus $\overline{D^2} = \overline{e_1^2} + \overline{e_2^2}$, and for large N $\overline{e_1^2} \to \overline{e_2^2} \to \overline{e^2}$

Therefore $\overline{D^2} = 2\overline{e^2}$, and

$$e = \sqrt{\overline{D^2}/2}.$$

This is the expression used to calculate the expected fractional error shown in the text. The expected percentage error is simply given by:

$$e*100$$

POOR

QUALITY

ORIGINAL